UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-Q

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarter ended September 30, 2020
or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission File No. 1-15579

MSA SAFETY INCORPORATED
(Exact name of registrant as specified in its charter)

Pennsylvania **(State or other jurisdiction of incorporation or organization)**	**46-4914539** **(IRS Employer Identification No.)**
1000 Cranberry Woods Drive **Cranberry Township, Pennsylvania** **(Address of principal executive offices)**	**16066-5207** **(Zip Code)**

Registrant's telephone number, including area code: (724) 776-8600

Former name or former address, if changed since last report: N/A

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months and (2) has been subject to such filing requirements for the past 90 days. Yes x No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes x No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	x	Accelerated filer	☐	Non-accelerated filer	☐	Smaller reporting company	☐
						Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No x

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which is registered
Common Stock, no par value	MSA	New York Stock Exchange

As of October 23, 2020, 38,953,300 shares of common stock, of the registrant were outstanding.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

MSA SAFETY INCORPORATED

CONDENSED CONSOLIDATED STATEMENTS OF INCOME

Unaudited

(In thousands, except per share amounts)	Three Months Ended September 30, 2020	Three Months Ended September 30, 2019	Nine Months Ended September 30, 2020	Nine Months Ended September 30, 2019
Net sales	$ 304,392	$ 351,014	$ 959,975	$ 1,026,726
Cost of products sold	172,160	192,313	528,799	556,959
Gross profit	132,232	158,701	431,176	469,767
Selling, general and administrative	64,793	82,900	214,066	245,337
Research and development	13,851	13,520	41,723	41,482
Restructuring charges (Note 4)	7,603	1,850	18,475	11,203
Currency exchange losses (gains), net (Note 6)	2,759	(913)	3,821	17,338
Product liability expense (Note 17)	2,077	1,730	4,878	8,155
Operating income	41,149	59,614	148,213	146,252
Interest expense	2,305	4,259	7,907	11,089
Other income, net	(1,117)	(2,929)	(4,376)	(8,850)
Total other expense, net	1,188	1,330	3,531	2,239
Income before income taxes	39,961	58,284	144,682	144,013
Provision for income taxes (Note 10)	11,727	15,673	36,251	37,913
Net income	28,234	42,611	108,431	106,100
Net income attributable to noncontrolling interests	(200)	(372)	(668)	(822)
Net income attributable to MSA Safety Incorporated	$ 28,034	$ 42,239	$ 107,763	$ 105,278
Earnings per share attributable to MSA Safety Incorporated common shareholders (Note 9):				
Basic	$ 0.72	$ 1.09	$ 2.77	$ 2.72
Diluted	$ 0.71	$ 1.08	$ 2.74	$ 2.69
Dividends per common share	$ 0.43	$ 0.42	$ 1.28	$ 1.22

The accompanying notes are an integral part of the condensed consolidated financial statements.

MSA SAFETY INCORPORATED

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Unaudited

(In thousands)	Three Months Ended September 30, 2020	Three Months Ended September 30, 2019	Nine Months Ended September 30, 2020	Nine Months Ended September 30, 2019
Net income	$ 28,234	$ 42,611	$ 108,431	$ 106,100
Other comprehensive income (loss), net of tax:				
Foreign currency translation adjustments (Note 6)	15,520	(16,091)	(2,758)	(16,115)
Pension and post-retirement plan actuarial gains, net of tax (Note 6)	3,058	2,257	9,250	5,658
Unrealized (loss) gain on available-for-sale securities (Note 6)	(74)	(9)	(12)	554
Reclassification of currency translation from accumulated other comprehensive (loss) into net income (Note 6)	—	(212)	720	15,147
Total other comprehensive income (loss), net of tax	18,504	(14,055)	7,200	5,244
Comprehensive income	46,738	28,556	115,631	111,344
Comprehensive income attributable to noncontrolling interests	(494)	(145)	(865)	(601)
Comprehensive income attributable to MSA Safety Incorporated	$ 46,244	$ 28,411	$ 114,766	$ 110,743

The accompanying notes are an integral part of the condensed consolidated financial statements.

MSA SAFETY INCORPORATED

CONDENSED CONSOLIDATED BALANCE SHEETS

Unaudited

(In thousands)	September 30, 2020	December 31, 2019
Assets		
Cash and cash equivalents	$ 132,830	$ 152,195
Trade receivables, less allowance for credit loss of $5,068 and $4,860	229,293	255,082
Inventories (Note 3)	252,856	185,027
Investments, short-term (Note 16)	69,940	49,892
Prepaid income taxes	18,030	13,072
Notes receivable, insurance companies (Note 17)	3,766	3,676
Prepaid expenses and other current assets	37,374	34,419
Total current assets	744,089	693,363
Property, plant and equipment, net (Note 5)	178,064	167,038
Operating lease assets, net	52,331	51,675
Prepaid pension cost (Note 14)	83,447	75,066
Deferred tax assets (Note 10)	33,490	32,596
Goodwill (Note 13)	436,273	436,679
Intangible assets, net (Note 13)	161,765	171,326
Notes receivable, insurance companies, noncurrent (Note 17)	48,214	52,336
Insurance receivable (Note 17) and other noncurrent assets	54,992	59,614
Total assets	$ 1,792,665	$ 1,739,693
Liabilities		
Notes payable and current portion of long-term debt (Note 12)	$ 20,000	$ 20,000
Accounts payable	79,774	89,120
Employees' compensation	41,213	41,882
Insurance and product liability (Note 17)	26,576	25,870
Income taxes payable (Note 10)	8,822	6,739
Warranty reserve (Note 17) and other current liabilities	108,273	93,898
Total current liabilities	284,658	277,509
Long-term debt, net (Note 12)	321,694	328,394
Pensions and other employee benefits	190,073	186,697
Noncurrent operating lease liabilities	43,639	42,632
Deferred tax liabilities (Note 10)	11,425	9,787
Product liability (Note 17) and other noncurrent liabilities	161,073	162,101
Total liabilities	$ 1,012,562	$ 1,007,120
Equity		
Preferred stock, 4.5% cumulative, $50 par value (Note 7)	$ 3,569	$ 3,569
Common stock, no par value (Note 7)	234,703	229,127
Treasury shares, at cost (Note 7)	(329,025)	(305,159)
Accumulated other comprehensive loss (Note 6)	(207,000)	(214,003)
Retained earnings	1,070,218	1,012,266
Total MSA Safety Incorporated shareholders' equity	772,465	725,800
Noncontrolling interests	7,638	6,773
Total shareholders' equity	780,103	732,573
Total liabilities and shareholders' equity	$ 1,792,665	$ 1,739,693

The accompanying notes are an integral part of the condensed consolidated financial statements.

MSA SAFETY INCORPORATED

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

Unaudited

	Nine Months Ended September 30,	
(In thousands)	**2020**	**2019**
Operating Activities		
Net income	$ 108,431	$ 106,100
Depreciation and amortization	29,284	28,339
Stock-based compensation (Note 11)	3,042	10,130
Pension expense (Note 14)	6,647	3,101
Deferred income tax (benefit) provision (Note 10)	(1,312)	424
Loss on asset dispositions, net	189	271
Pension contributions (Note 14)	(5,672)	(5,300)
Currency exchange losses, net	3,821	17,338
Product liability expense (Note 17)	4,878	8,155
Collections on insurance receivables and notes receivable, insurance companies (Note 17)	10,844	18,724
Product liability payments (Note 17)	(6,648)	(43,851)
Changes in:		
Trade receivables	23,744	(5,414)
Inventories (Note 3)	(70,148)	(33,996)
Prepaid expenses and other current assets	(7,673)	(10,755)
Accounts payable and accrued liabilities	10,782	(3,647)
Other noncurrent assets and liabilities	(54)	(1,369)
Cash Flow From Operating Activities	110,155	88,250
Investing Activities		
Capital expenditures	(32,698)	(23,523)
Acquisition, net of cash acquired	—	(33,196)
Purchase of short-term investments (Note 16)	(174,337)	(149,359)
Proceeds from maturities of short-term investments (Note 16)	155,000	132,170
Property disposals	334	123
Cash Flow Used in Investing Activities	(51,701)	(73,785)
Financing Activities		
Payments on short-term debt, net	—	(63)
Proceeds from long-term debt (Note 12)	779,000	621,000
Payments on long-term debt (Note 12)	(784,000)	(608,000)
Cash dividends paid	(49,811)	(47,215)
Company stock purchases (Note 7)	(28,691)	(11,060)
Exercise of stock options (Note 7)	6,969	4,161
Employee stock purchase plan (Note 7)	390	344
Cash Flow Used in Financing Activities	(76,143)	(40,833)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(1,668)	(5,378)
Decrease in cash, cash equivalents and restricted cash	(19,357)	(31,746)
Beginning cash, cash equivalents and restricted cash	152,543	140,604
Ending cash, cash equivalents and restricted cash	$ 133,186	$ 108,858
Supplemental cash flow information:		
Cash and cash equivalents	$ 132,830	$ 108,481
Restricted cash included in prepaid expenses and other current assets	356	377
Total cash, cash equivalents and restricted cash	$ 133,186	$ 108,858

The accompanying notes are an integral part of the condensed consolidated financial statements.

MSA SAFETY INCORPORATED

CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN RETAINED EARNINGS, ACCUMULATED OTHER COMPREHENSIVE LOSS AND NONCONTROLLING INTERESTS

Unaudited

(In thousands)	Retained Earnings	Accumulated Other Comprehensive (Loss)	Noncontrolling Interests
Balances June 30, 2019	$ 971,453	$ (203,406)	$ 6,093
Net income	42,611	—	—
Foreign currency translation adjustments	—	(16,091)	—
Pension and post-retirement plan adjustments, net of tax of $468	—	2,257	—
Unrealized net loss on available-for-sale securities		(9)	—
Reclassification from accumulated other comprehensive (loss) into net income	—	(212)	—
Income attributable to noncontrolling interests	(372)	227	145
Common dividends	(16,270)	—	—
Preferred dividends ($0.5625 per share)	(10)	—	—
Balances September 30, 2019	$ 997,412	$ (217,234)	$ 6,238
Balances June 30, 2020	$ 1,058,955	$ (225,210)	$ 7,144
Net income	28,234	—	—
Foreign currency translation adjustments	—	15,520	—
Pension and post-retirement plan adjustments, net of tax of $1,111	—	3,058	—
Unrealized net loss on available-for-sale securities (Note 17)	—	(74)	—
Income attributable to noncontrolling interests	(200)	(294)	494
Common dividends	(16,761)	—	—
Preferred dividends ($0.5625 per share)	(10)	—	—
Balances September 30, 2020	$ 1,070,218	$ (207,000)	$ 7,638
Balances December 31, 2018	$ 935,577	$ (218,927)	$ 5,637
Net income	106,100	—	—
Foreign currency translation adjustments	—	(16,115)	—
Pension and post-retirement plan adjustments, net of tax of $2,518	—	5,658	—
Unrealized net gain on available-for-sale securities (Note 16)	—	554	—
Reclassification from accumulated other comprehensive (loss) into net income (Note 6)	—	15,147	—
Income attributable to noncontrolling interests	(822)	221	601
Common dividends	(47,185)	—	—
Preferred dividends ($0.5625 per share)	(30)	—	—
Cumulative effect of the adoption of ASU 2018-02	3,772	(3,772)	—
Balances September 30, 2019	$ 997,412	$ (217,234)	$ 6,238
Balances December 31, 2019	$ 1,012,266	$ (214,003)	$ 6,773
Net income	108,431	—	—
Foreign currency translation adjustments	—	(2,758)	—
Pension and post-retirement plan adjustments, net of tax of $3,257	—	9,250	—
Unrealized net loss on available-for-sale securities (Note 16)	—	(12)	—
Reclassification of currency translation from accumulated other comprehensive (loss) into net income (Note 6)	—	720	—
Income attributable to noncontrolling interests	(668)	(197)	865
Common dividends	(49,781)	—	—
Preferred dividends ($0.5625 per share)	(30)	—	—
Balances September 30, 2020	$ 1,070,218	$ (207,000)	$ 7,638

The accompanying notes are an integral part of the condensed consolidated financial statements.

MSA SAFETY INCORPORATED

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

Unaudited

Note 1—Basis of Presentation

The condensed consolidated financial statements of MSA Safety Incorporated and its subsidiaries ("MSA" or the "Company") are unaudited. These condensed consolidated financial statements include all adjustments, consisting of normal recurring adjustments, considered necessary by management to fairly state the Company's results. Intercompany accounts and transactions have been eliminated. The results reported in these condensed consolidated financial statements are not necessarily indicative of the results that may be expected for the entire year. The December 31, 2019, Condensed Consolidated Balance Sheet data was derived from the audited Consolidated Balance Sheet, but does not include all disclosures required by accounting principles generally accepted in the United States of America (U.S. GAAP). This Form 10-Q report should be read in conjunction with MSA's Form 10-K for the year ended December 31, 2019, which includes all disclosures required by U.S. GAAP.

Note 2—Recently Adopted and Recently Issued Accounting Standards

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses*. This ASU introduces an approach based on expected losses to estimate credit losses on certain types of financial instruments, including loans, held-to-maturity debt securities, loan commitments, financial guarantees and net investments in leases, as well as reinsurance and trade receivables. This ASU was adopted on January 1, 2020, which did not have an impact on the unaudited condensed consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, *Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement*, which improves fair value disclosure requirements by removing disclosures that are not cost beneficial, clarifying disclosures' specific requirements and adding relevant disclosure requirements. The Company adopted this ASU on January 1, 2020. The adoption of this ASU did not have a material impact on the unaudited condensed consolidated financial statements. The Company expects to include changes to our annual disclosures as a result of the adoption of this ASU.

In August 2018, the FASB issued ASU 2018-14, *Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans*, which improves defined benefit disclosure requirements by removing disclosures that are not cost beneficial, clarifying disclosures' specific requirements and adding relevant disclosure requirements. This ASU is effective for fiscal years ending after December 15, 2020, and early adoption is permitted. The amendments in this ASU are required to be applied on a retrospective basis to all periods presented. The Company is still evaluating the impact that the adoption of this ASU will have on our consolidated financial statements.

Note 3—Inventories

The following table sets forth the components of inventory:

(In thousands)	**September 30, 2020**	**December 31, 2019**
Finished products	$ 101,490	$ 71,918
Work in process	8,610	4,083
Raw materials and supplies	187,012	151,129
Inventories at current cost	297,112	227,130
Less: LIFO valuation	(44,256)	(42,103)
Total inventories	$ 252,856	$ 185,027

Note 4—Restructuring Charges

During the three and nine months ended September 30, 2020, we recorded restructuring charges of $7.6 million and $18.5 million, respectively. International segment restructuring charges of $13.7 million during the nine months ended September 30, 2020, were primarily related to severance costs for staff reductions and footprint optimization associated with our ongoing initiatives to drive profitable growth. Americas segment restructuring charges of $3.7 million during the nine months ended September 30, 2020, were primarily related to costs associated with our global Fixed Gas & Flame Detection manufacturing footprint optimization as well as programs to adjust our operations in response to current business conditions.

During the three and nine months ended September 30, 2019, we recorded restructuring charges of $1.9 million and $11.2 million, respectively. International segment restructuring charges of $10.5 million during the nine months ended September 30, 2019, were primarily related to severance costs for staff reductions associated with our ongoing initiatives to drive profitable growth and a non-cash settlement charge for the closure of our pension plan in the United Kingdom. Corporate segment restructuring charges of $0.5 million during the nine months ended September 30, 2019, were primarily related to the legal and operational realignment of our U.S. and Canadian operations.

Activity and reserve balances for restructuring charges by segment were as follows:

(In millions)	Americas	International	Corporate	Total
Reserve balances at December 31, 2018	$ 0.5	$ 4.0	$ —	$ 4.5
Restructuring charges	0.5	12.7	0.6	13.8
Currency translation and other adjustments	(0.1)	(0.6)	—	(0.7)
Cash payments / utilization	(0.6)	(10.2)	(0.6)	(11.4)
Reserve balances at December 31, 2019	$ 0.3	$ 5.9	$ —	$ 6.2
Restructuring charges	3.7	13.7	1.1	18.5
Currency translation and other adjustments	(0.1)	(0.2)	—	(0.3)
Cash payments	(0.3)	(4.5)	(0.3)	(5.1)
Reserve balances at September 30, 2020	$ 3.6	$ 14.9	$ 0.8	$ 19.3

Note 5—Property, Plant and Equipment

The following table sets forth the components of property, plant and equipment, net:

(In thousands)	September 30, 2020	December 31, 2019
Land	$ 4,184	$ 4,194
Buildings	126,600	125,223
Machinery and equipment	412,013	397,287
Construction in progress	40,570	24,759
Total	583,367	551,463
Less: accumulated depreciation	(405,303)	(384,425)
Property, plant and equipment, net	$ 178,064	$ 167,038

Note 6—Reclassifications Out of Accumulated Other Comprehensive Loss

Changes in accumulated other comprehensive loss were as follows:

	MSA Safety Incorporated				Noncontrolling Interests			
	Three Months Ended September 30,				Three Months Ended September 30,			
(In thousands)	2020		2019		2020		2019	
Pension and other post-retirement benefits [a]								
Balance at beginning of period	$	(118,656)	$	(115,888)	$	—	$	—
Amounts reclassified from accumulated other comprehensive loss into net income:								
Amortization of prior service credit (Note 14)		(52)		(47)		—		—
Recognized net actuarial losses (Note 14)		4,221		2,772		—		—
Tax benefit		(1,111)		(468)		—		—
Total amount reclassified from accumulated other comprehensive loss, net of tax, into net income		3,058		2,257		—		—
Balance at end of period	$	(115,598)	$	(113,631)	$	—	$	—
Available-for-sale securities								
Balance at beginning of period	$	68	$	(9)	$	—	$	—
Unrealized loss on available-for-sale securities (Note 16)		(74)		(9)		—		—
Balance at end of period	$	(6)	$	(18)	$	—	$	—
Foreign currency translation								
Balance at beginning of period	$	(106,622)	$	(87,509)	$	326	$	502
Reclassification from accumulated other comprehensive loss into net income		—		(212) [b]		—		—
Foreign currency translation adjustments		15,226		(15,864)		294		(227)
Balance at end of period	$	(91,396)	$	(103,585)	$	620	$	275

[a] Reclassifications out of accumulated other comprehensive loss and into net income are included in the computation of net periodic pension and other post-retirement benefit costs (refer to Note 14—Pensions and Other Post-retirement Benefits).

[b] Reclassifications into net income relate primarily to the closure of several subsidiaries in our Europe, Middle East & Africa ("EMEA") operating segment and are included in Currency exchange losses (gains), net, within the unaudited Condensed Consolidated Statement of Income.

(In thousands)	MSA Safety Incorporated Nine Months Ended September 30, 2020	2019	Noncontrolling Interests Nine Months Ended September 30, 2020	2019
Pension and other post-retirement benefits [a]				
Balance at beginning of period	$ (124,848)	$ (115,517)	$ —	$ —
Amounts reclassified from accumulated other comprehensive loss into net income:				
Amortization of prior service credit (Note 14)	(156)	(141)	—	—
Recognized net actuarial losses (Note 14)	12,663	8,317	—	—
Tax benefit	(3,257)	(2,518)	—	—
Total amount reclassified from accumulated other comprehensive loss, net of tax, into net income	9,250	5,658	—	—
Reclassification to retained earnings due to adoption of ASU 2018-02	—	(3,772)	—	—
Balance at end of period	$ (115,598)	$ (113,631)	$ —	$ —
Available-for-sale securities				
Balance at beginning of period	$ 6	$ (572)	$ —	$ —
Unrealized (loss) gain on available-for-sale securities (Note 16)	(12)	554	—	—
Balance at end of period	$ (6)	$ (18)	$ —	$ —
Foreign currency translation				
Balance at beginning of period	$ (89,161)	$ (102,838)	$ 423	$ 496
Reclassification from accumulated other comprehensive loss into net income	720 [b]	15,147 [c]	—	—
Foreign currency translation adjustments	(2,955)	(15,894)	197	(221)
Balance at end of period	$ (91,396)	$ (103,585)	$ 620	$ 275

[a] Reclassifications out of accumulated other comprehensive loss and into net income are included in the computation of net periodic pension and other post-retirement benefit costs (refer to Note 14—Pensions and Other Post-retirement Benefits).

[b] Reclassifications into net income relate primarily to the approval of our plan to close several subsidiaries in our Europe, Middle East & Africa ("EMEA") operating segment and are included in Currency exchange losses (gains), net, within the unaudited Condensed Consolidated Statement of Income.

[c] Reclassifications out of accumulated other comprehensive loss into net income relate primarily to the closure of our South Africa subsidiaries and are included in Currency exchange losses (gains), net, within the unaudited Condensed Consolidated Statement of Income.

Note 7—Capital Stock

Preferred Stock - The Company has authorized 100,000 shares of $50 par value 4.5% cumulative preferred nonvoting stock which is callable at $52.50. There are 71,340 shares issued and 52,998 shares held in treasury at September 30, 2020. The Treasury shares at cost line on the unaudited Condensed Consolidated Balance Sheet includes $1.8 million related to preferred stock. There were treasury purchases of 120 preferred stock shares during the nine months ended September 30, 2020. There were no treasury purchases of preferred stock during the nine months ended September 30, 2019. The Company has also authorized 1,000,000 shares of $10 par value second cumulative preferred voting stock. No shares have been issued as of September 30, 2020.

Common Stock - The Company has authorized 180,000,000 shares of no par value common stock. There were 62,081,391 shares issued as of December 31, 2019. No new shares were issued during the nine months ended September 30, 2020, or 2019. There were 38,950,467 and 38,841,194 shares outstanding at September 30, 2020, and December 31, 2019, respectively.

Treasury Shares - The Company's share repurchase program authorizes up to $100.0 million to repurchase MSA common stock in the open market and in private transactions. The share repurchase program has no expiration date. The maximum number of shares that may be repurchased is calculated based on the dollars remaining under the program and the respective month-end closing share price. During the nine months ended September 30, 2020, 175,000 shares were repurchased under this program and all of the repurchases occurred during the first quarter. During the nine months ended September 30, 2019, 33,465 shares were repurchased under the program. There were 23,130,924 and 23,240,197 Treasury Shares at September 30, 2020, and December 31, 2019, respectively.

The Company issues Treasury Shares for all stock-based compensation plans. Shares are issued from Treasury at the average Treasury Share cost on the date of the transaction. There were 66,893 and 320,718 Treasury Shares issued for these purposes during the nine months ended September 30, 2020 and 2019, respectively.

Common stock activity is summarized as follows:

	Three Months Ended September 30, 2020		Three Months Ended September 30, 2019	
(In thousands)	**Common Stock**	**Treasury Cost**	**Common Stock**	**Treasury Cost**
Balance at beginning of period	$ 233,786	$ (327,997)	$ 218,801	$ (303,744)
Stock compensation expense	(1,309)	—	4,044	—
Restricted and performance stock awards	(50)	50	(70)	70
Stock options exercised	2,276	954	637	292
Treasury shares purchased	—	(439)	—	(118)
Balance at end of period	$ 234,703	$ (327,432)	$ 223,412	$ (303,500)

	Nine Months Ended September 30, 2020		Nine Months Ended September 30, 2019	
(In thousands)	**Common Stock**	**Treasury Cost**	**Common Stock**	**Treasury Cost**
Balance at beginning of period	$ 229,127	$ (303,566)	$ 211,806	$ (296,390)
Stock compensation expense	3,042	—	10,130	—
Restricted and performance stock awards	(2,513)	2,513	(2,713)	2,713
Stock options exercised	4,709	2,260	2,967	1,194
Treasury shares purchased	—	(8,578)	—	(7,713)
Stock consideration in acquisition	—	—	921	—
Employee stock purchase program	338	52	301	43
Share repurchase program	—	(20,113)	—	(3,347)
Balance at end of period	$ 234,703	$ (327,432)	$ 223,412	$ (303,500)

Note 8—Segment Information

On January 1, 2020, we restructured our business from six geographical operating segments into four geographical operating segments that are based on management responsibilities: Northern North America, Latin America, Europe, Middle East & Africa ("EMEA"), and Asia Pacific ("APAC") to better serve customer needs. The operating segments have been aggregated (based on economic similarities, the nature of their products, end-user markets and methods of distribution) into three reportable segments: Americas, International, and Corporate. The operating segment change did not impact reportable segments as all changes were within the International reportable segment.

The Americas segment is comprised of our operations in North American and Latin American geographies. The International segment is comprised of our operations of all geographies outside of the Americas. Certain global expenses are allocated to each segment in a manner consistent with where the benefits from the expenses are derived.

The Company's sales are allocated to each country based primarily on the destination of the end-customer.

Adjusted operating income (loss), adjusted operating margin, adjusted earnings before interest, taxes, depreciation and amortization (EBITDA) and adjusted EBITDA margin are the measures used by the chief operating decision maker to evaluate segment performance and allocate resources. Adjusted operating income (loss) is defined as operating income excluding restructuring charges, currency exchange gains (losses), product liability expense, strategic transaction costs and COVID-19 related costs, consisting of a one-time bonus for essential manufacturing employees and adjusted operating margin is defined as adjusted operating income (loss) divided by segment sales to external customers. Adjusted EBITDA is defined as adjusted operating income (loss) plus depreciation and amortization and adjusted EBITDA margin is defined as adjusted EBITDA divided by segment sales to external customers. Adjusted operating income (loss), adjusted operating margin, adjusted EBITDA and adjusted EBITDA margin are not recognized terms under U.S. GAAP, and therefore, do not purport to be alternatives to operating income or operating margin as a measure of operating performance. Further, the Company's measure of adjusted operating income (loss), adjusted operating margin, adjusted EBITDA and adjusted EBITDA margin may not be comparable to similarly titled measures of other companies. Adjusted operating income (loss) and adjusted EBITDA on a consolidated basis is presented in the following table to reconcile the segment operating performance measure to operating income as presented on the Consolidated Statement of Income.

The accounting principles applied at the operating segment level in determining operating income (loss) are generally the same as those applied at the consolidated financial statement level. Sales and transfers between operating segments are accounted for at market-based transaction prices and are eliminated in consolidation.

Reportable segment information is presented in the following table:

(In thousands, except percentage amounts)	Americas	International	Corporate	Consolidated Totals
Three Months Ended September 30, 2020				
Sales to external customers	$ 194,303	$ 110,089	$ —	$ 304,392
Operating income				41,149
Restructuring charges (Note 4)				7,603
Currency exchange losses, net (Note 6)				2,759
Product liability expense (Note 17)				2,077
Strategic transaction costs				41
Adjusted operating income (loss)	40,898	15,658	(2,927)	53,629
Adjusted operating margin %	21.0 %	14.2 %		
Depreciation and amortization				9,856
Adjusted EBITDA	47,465	18,848	(2,828)	63,485
Adjusted EBITDA %	24.4 %	17.1 %		
Nine Months Ended September 30, 2020				
Sales to external customers	$ 629,787	$ 330,188	$ —	$ 959,975
Operating income				148,213
Restructuring charges (Note 4)				18,475
Currency exchange losses, net (Note 6)				3,821
Product liability expense (Note 17)				4,878
Strategic transaction costs				202
COVID-19 related costs				757
Adjusted operating income (loss)	149,708	45,719	(19,081)	176,346
Adjusted operating margin %	23.8 %	13.8 %		
Depreciation and amortization				29,284
Adjusted EBITDA	169,343	55,075	(18,788)	205,630
Adjusted EBITDA %	26.9 %	16.7 %		

(In thousands, except percentage amounts)	Americas	International	Corporate	Consolidated Totals
Three Months Ended September 30, 2019				
Sales to external customers	$ 234,624	$ 116,390	$ —	$ 351,014
Operating income				59,614
Restructuring charges (Note 4)				1,850
Currency exchange gains, net (Note 6)				(913)
Product liability expense (Note 17)				1,730
Strategic transaction costs				952
Adjusted operating income (loss)	58,971	13,776	(9,514)	63,233
Adjusted operating margin %	25.1 %	11.8 %		
Depreciation and amortization				9,547
Adjusted EBITDA	65,342	16,854	(9,416)	72,780
Adjusted EBITDA %	27.8 %	14.5 %		
Nine Months Ended September 30, 2019				
Sales to external customers	$ 679,699	$ 347,027	$ —	$ 1,026,726
Operating income				146,252
Restructuring charges (Note 4)				11,203
Currency exchange losses, net (Note 6)				17,338
Product liability expense (Note 17)				8,155
Strategic transaction costs				2,937
Adjusted operating income (loss)	171,463	39,888	(25,466)	185,885
Adjusted operating margin %	25.2 %	11.5 %		
Depreciation and amortization				28,339
Adjusted EBITDA	190,084	49,313	(25,173)	214,224
Adjusted EBITDA %	28.0 %	14.2 %		

Total sales by product group was as follows:

Three Months Ended September 30, 2020 (In thousands, except percentages)	Consolidated		Americas		International	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
Breathing Apparatus	$ 62,454	20%	$ 38,889	20%	$ 23,565	21%
Fixed Gas & Flame Detection	70,038	23%	39,411	20%	30,627	28%
Firefighter Helmets & Protective Apparel	38,785	13%	33,000	17%	5,785	5%
Portable Gas Detection	32,701	11%	20,972	11%	11,729	11%
Industrial Head Protection	29,328	10%	21,489	11%	7,839	7%
Fall Protection	24,620	8%	13,109	7%	11,511	11%
Other [(a)]	46,466	15%	27,433	14%	19,033	17%
Total	$ 304,392	100%	$ 194,303	100%	$ 110,089	100%

Nine Months Ended September 30, 2020 (In thousands, except percentages)	Consolidated		Americas		International	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
Breathing Apparatus	$ 214,162	22%	$ 141,850	23%	$ 72,312	22%
Fixed Gas & Flame Detection	205,334	21%	117,399	19%	87,935	27%
Firefighter Helmets & Protective Apparel	121,669	13%	101,857	16%	19,812	6%
Portable Gas Detection	102,138	11%	65,822	10%	36,316	11%
Industrial Head Protection	95,260	10%	69,549	11%	25,711	8%
Fall Protection	73,707	8%	42,185	7%	31,522	9%
Other [(a)]	147,705	15%	91,125	14%	56,580	17%
Total	$ 959,975	100%	$ 629,787	100%	$ 330,188	100%

Three Months Ended September 30, 2019 (In thousands, except percentages)	Consolidated		Americas		International	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
Breathing Apparatus	$ 71,312	20%	$ 46,287	20%	$ 25,025	22%
Fixed Gas & Flame Detection	75,855	22%	42,953	18%	32,902	28%
Firefighter Helmets & Protective Apparel	42,804	12%	35,017	15%	7,787	7%
Portable Gas Detection	44,240	13%	30,305	13%	13,935	12%
Industrial Head Protection	37,730	11%	29,217	12%	8,513	7%
Fall Protection	34,639	10%	22,972	10%	11,667	10%
Other [(a)]	44,434	12%	27,873	12%	16,561	14%
Total	$ 351,014	100%	$ 234,624	100%	$ 116,390	100%

Nine Months Ended September 30, 2019 (In thousands, except percentages)	Consolidated		Americas		International	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
Breathing Apparatus	$ 221,666	22%	$ 147,776	22%	$ 73,890	21%
Fixed Gas & Flame Detection	206,564	20%	115,001	17%	91,563	26%
Firefighter Helmets & Protective Apparel	135,181	13%	109,173	16%	26,008	7%
Portable Gas Detection	127,309	12%	85,763	13%	41,546	12%
Industrial Head Protection	112,395	11%	87,475	13%	24,920	7%
Fall Protection	96,396	9%	59,653	9%	36,743	11%
Other [(a)]	127,215	13%	74,858	10%	52,357	16%
Total	$ 1,026,726	100%	$ 679,699	100%	$ 347,027	100%

[(a)]Other products include sales of Air Purifying Respirators ("APR").

Note 9—Earnings per Share

Basic earnings per share attributable to MSA Safety Incorporated common shareholders is computed by dividing net income, after the deduction of preferred stock dividends and undistributed earnings allocated to participating securities, by the weighted average number of common shares outstanding during the period. Diluted earnings per share attributable to MSA Safety Incorporated common shareholders assumes the issuance of common stock for all potentially dilutive share equivalents outstanding not classified as participating securities. Participating securities are defined as unvested stock-based compensation awards that contain nonforfeitable rights to dividends.

Amounts attributable to MSA Safety Incorporated common shareholders:	**Three Months Ended September 30,**		**Nine Months Ended September 30,**	
(In thousands, except per share amounts)	**2020**	**2019**	**2020**	**2019**
Net income	$ 28,034	$ 42,239	$ 107,763	$ 105,278
Preferred stock dividends	(10)	(10)	(30)	(30)
Net income available to common equity	28,024	42,229	107,733	105,248
Dividends and undistributed earnings allocated to participating securities	(12)	(88)	(79)	(159)
Net income available to common shareholders	28,012	42,141	107,654	105,089
Basic weighted-average shares outstanding	38,906	38,649	38,853	38,617
Stock-based compensation awards	354	495	416	513
Diluted weighted-average shares outstanding	39,260	39,144	39,269	39,130
Antidilutive stock options	—	—	—	—
Earnings per share:				
Basic	$ 0.72	$ 1.09	$ 2.77	$ 2.72
Diluted	$ 0.71	$ 1.08	$ 2.74	$ 2.69

Note 10—Income Taxes

The Company's effective tax rate for the third quarter of 2020 was 29.3% and differs from the U.S. federal statutory rate of 21% primarily due to state income taxes, increased profitability in less favorable tax jurisdictions, higher foreign entity losses in jurisdictions where we cannot take tax benefits, increased statutory rates in foreign jurisdictions, nondeductible executive compensation, and U.S. tax on foreign dividends. The Company's effective tax rate for the third quarter of 2019 was 26.9%, which differs from the U.S. statutory rate of 21% primarily due to dividend income subject to income tax in foreign jurisdictions and a reduction in the benefit related to domestic goods sold into foreign markets.

The Company's effective tax rate for the nine months ended September 30, 2020, was 25.1% and differs from the U.S. federal statutory rate of 21% primarily due to state income taxes, increased profitability in less favorable tax jurisdictions and higher foreign entity losses in jurisdictions where we cannot take tax benefits, increased statutory rates in foreign jurisdictions, partially offset by tax benefits on certain share-based payments. The Company's effective tax rate for the nine months ended September 30, 2019, was 26.3% which differs from the U.S. federal statutory rate of 21% primarily due to higher profitability and dividend income in less favorable tax jurisdictions, higher foreign entity losses in jurisdictions where we cannot take tax benefits, and nondeductible foreign exchange on entity closures, partially offset by certain share-based payments related to the application of ASU 2016-09.

At September 30, 2020, the Company had a gross liability for unrecognized tax benefits of $5.2 million. The Company has recognized tax benefits associated with these liabilities of $2.2 million at September 30, 2020. The gross liability includes amounts associated with foreign tax exposure in prior periods.

The Company recognizes interest related to unrecognized tax benefits in interest expense and penalties in operating expenses. The Company's liability for accrued interest related to uncertain tax positions was $1.0 million at September 30, 2020.

We are subject to regular review and audit by both foreign and domestic tax authorities. While we believe our tax positions will be sustained, the final outcome of tax audits and related litigation may differ materially from the tax amounts recorded in our unaudited condensed consolidated financial statements.

Note 11—Stock Plans

The 2016 Management Equity Incentive Plan provides for various forms of stock-based compensation for eligible key employees through May 2026. Management stock-based compensation includes stock options, restricted stock awards, restricted stock units and performance stock units. The 2017 Non-Employee Directors' Equity Incentive Plan provides for grants of stock options and restricted stock to non-employee directors through May 2027. We issue treasury shares for stock option exercises and grants of restricted stock and performance stock. Please refer to Note 7—Capital Stock for further information regarding stock compensation share issuance.

Stock compensation expense is as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(In thousands)	**2020**	**2019**	**2020**	**2019**
Stock compensation (benefit) expense[a]	$ (1,309)	$ 4,044	$ 3,042	$ 10,130
Income tax (expense) benefit	(319)	987	742	2,472
Stock compensation (benefit) expense, net of tax	$ (990)	$ 3,057	$ 2,300	$ 7,658

[a] The Company adjusted cumulative stock compensation expense for changes in expected performance against target metrics for unvested performance stock units. This resulted in a benefit during the three months ended September 30, 2020.

A summary of stock option activity for the nine months ended September 30, 2020, follows:

	Shares	Weighted Average Exercise Price
Outstanding at January 1, 2020	559,656	$ 45.78
Exercised	(162,983)	42.76
Forfeited	(954)	42.00
Outstanding at September 30, 2020	395,719	47.03
Exercisable at September 30, 2020	392,726	$ 47.03

Restricted stock awards and restricted stock units are valued at the market value of the stock on the grant date. A summary of restricted stock activity for the nine months ended September 30, 2020, follows:

	Shares	Weighted Average Grant Date Fair Value
Unvested at January 1, 2020	172,701	$ 90.38
Granted	48,138	122.69
Vested	(63,104)	81.56
Forfeited	(5,081)	104.53
Unvested at September 30, 2020	152,654	$ 103.75

Performance stock units have a market condition modifier and are valued at an estimated fair value using a Monte Carlo model. The final number of shares to be issued for performance stock units granted in the first quarter of 2020 may range from 0% to 200% of the target award based on achieving the specified performance targets over the performance period plus an additional modifier based on total shareholder return (TSR) over the performance period. The following weighted average assumptions were used in estimating the fair value of the performance stock units granted in the first quarter of 2020.

Fair value per unit	$127.36
Risk-free interest rate	1.16%
Expected dividend yield	1.48%
Expected volatility	24.8%
MSA stock beta	0.988

The risk-free interest rate is based on the U.S. Treasury Constant Maturity rates as of the grant date converted into an implied spot rate yield curve. Expected dividend yield is based on the most recent annualized dividend divided by the one year average closing share price. Expected volatility is based on the ten year historical volatility using daily stock prices. Expected life is based on historical stock option exercise data.

A summary of performance stock unit activity for the nine months ended September 30, 2020, follows:

	Shares	Weighted Average Grant Date Fair Value
Unvested at January 1, 2020	238,035	$ 85.39
Granted	65,982	127.33
Performance adjustments	33,499	72.36
Vested	(132,036)	73.00
Forfeited	(3,698)	120.69
Unvested at September 30, 2020	201,782	$ 104.41

The performance adjustments above relate primarily to the final number of shares issued for the 2017 performance unit awards which vested in the first quarter of 2020 at 135.7% of the target award based on both cumulative performance against the operating margin and revenue growth targets and MSA's TSR during the three-year performance period.

Note 12—Long-Term Debt

(In thousands)	September 30, 2020	December 31, 2019
2010 Senior Notes payable through 2021, 4.00%, net of debt issuance costs	$ 40,000	$ 40,000
2016 Senior Notes payable through 2031, 3.40%, net of debt issuance costs	70,866	72,708
Senior revolving credit facility maturing in 2023, net of debt issuance costs	230,828	235,686
Total	341,694	348,394
Amounts due within one year, net of debt issuance costs	20,000	20,000
Long-term debt, net of debt issuance costs	$ 321,694	$ 328,394

On September 7, 2018, the Company entered into an amended agreement covering its senior revolving credit facility that extended its term through September 2023 and increased the capacity to $600.0 million. Under the amended agreement, the Company may elect either a Base rate of interest (“BASE”) or an interest rate based on the London Interbank Offered Rate (“LIBOR”). The BASE is a daily fluctuating per annum rate equal to the highest of (i) 0.00%, (ii) the Prime Rate, (ii) the Federal Funds Open Rate plus one half of one percent (0.5%), (iii) the Overnight Bank Funding Rate, plus one half of one percent (0.50%), or (iv) the Daily Libor Rate plus one percent (1.00%). The Company pays a credit spread of 0 to 175 basis points based on the Company’s net EBITDA leverage ratio and elected rate (BASE or LIBOR). The Company has a weighted average revolver interest rate of 1.15% as of September 30, 2020. At September 30, 2020, $366.2 million of the existing $600.0 million senior revolving credit facility was unused, including letters of credit issued under the facility. The facility also provides an accordion feature that allows the Company to access an additional $400.0 million of capacity pending approval from the bank group.

On January 22, 2016, the Company entered into an amended multi-currency note purchase and private shelf agreement, pursuant to which the Company issued notes in an aggregate original principal amount of £54.9 million (approximately $71.0 million at September 30, 2020). The Notes are repayable in annual installments of £6.1 million (approximately $7.9 million at September 30, 2020), commencing January 22, 2023, with a final payment of any remaining amount outstanding on January 22, 2031. The interest rate on these Notes is fixed at 3.4%. On September 7, 2018, the Company further amended the multi-currency note purchase and private shelf agreement, among other things, to allow the Company to request from time to time during a three-year period ending September 7, 2021, the issuance of up to $150 million of additional senior notes. No additional notes have been issued under the amended agreement as of September 30, 2020.

On January 4, 2019, the Company entered into an amended and restated master note facility with New York Life. Under the amended facility, the Company may request from time to time during a three-year period ending January 4, 2022, the issuance of up to $150 million of additional senior promissory notes. As of September 30, 2020, no notes have been issued under the amended facility.

The senior revolving credit facility and the multi-currency note purchase and private shelf agreement require the Company to comply with specified financial covenants, including a requirement to maintain a minimum fixed charges coverage ratio of not less than 1.50 to 1.00 and a consolidated leverage ratio not to exceed 3.50 to 1.00; except during an acquisition period in which case the consolidated net leverage ratio shall not exceed 4.00 to 1.00; in each case calculated on the basis of the trailing four fiscal quarters. In addition, both agreements contain negative covenants limiting the ability of the Company and its subsidiaries to incur additional indebtedness or issue guarantees, create or incur liens, make loans and investments, make acquisitions, transfer or sell assets, enter into transactions with affiliated parties, make changes in its organizational documents that are materially adverse to lenders or modify the nature of the Company's or its subsidiaries' business. However, the covenants contained in the New York Life amended facility do not apply until promissory notes are issued.

The Company was in compliance with all debt covenants at September 30, 2020.

The Company had outstanding bank guarantees and standby letters of credit with banks as of September 30, 2020, totaling $9.6 million, of which $1.9 million relate to the senior revolving credit facility. The letters of credit serve to cover customer requirements in connection with certain sales orders and insurance. The Company is also required to provide cash collateral in connection with certain arrangements. At September 30, 2020, the Company has $0.4 million of restricted cash in support of these arrangements.

Note 13—Goodwill and Intangible Assets

Changes in goodwill during the nine months ended September 30, 2020 are as follows:

(In thousands)		Goodwill
Balance at January 1, 2020	$	436,679
Currency translation		(406)
Balance at September 30, 2020	$	436,273

At September 30, 2020, the Company had goodwill of $293.2 million and $143.1 million related to the Americas and International reportable segments, respectively.

Changes in intangible assets, net during the nine months ended September 30, 2020, are as follows:

(In thousands)		Intangible Assets
Net balance at January 1, 2020	$	171,326
Amortization expense		(8,641)
Currency translation		(920)
Net balance at September 30, 2020	$	161,765

At September 30, 2020, the above intangible assets balance includes a trade name related to the Globe acquisition with an indefinite life totaling $60.0 million.

Note 14—Pensions and Other Post-retirement Benefits

Components of net periodic benefit cost consisted of the following:

	Pension Benefits		Other Benefits	
(In thousands)	**2020**	**2019**	**2020**	**2019**
Three Months Ended September 30,				
Service cost	$ 3,012	$ 2,579	$ 99	$ 88
Interest cost	3,726	4,712	179	249
Expected return on plan assets	(8,503)	(9,655)	—	—
Amortization of prior service cost (credit)	46	54	(98)	(101)
Recognized net actuarial losses	3,935	2,555	286	217
Net periodic benefit cost [(a)]	$ 2,216	$ 245	$ 466	$ 453
Nine Months Ended September 30,				
Service cost	$ 9,035	$ 7,738	$ 297	$ 266
Interest cost	11,178	14,138	537	747
Expected return on plan assets	(25,509)	(28,966)	—	—
Amortization of prior service cost (credit)	138	162	(294)	(303)
Recognized net actuarial losses	11,805	7,666	858	651
Settlements	—	2,363 [(b)]	—	—
Net periodic benefit cost[(a)]	$ 6,647	$ 3,101	$ 1,398	$ 1,361

[(a)] Components of net periodic benefit cost other than service cost are included in the line item "Other income, net" in the unaudited Condensed Consolidated Statement of Income.
[(b)] Related to a non-cash charge associated with the closure of our pension plan in the U.K. and included in "Restructuring charges" on the unaudited Condensed Consolidated Statement of Income.

We made contributions of $5.7 million and $5.3 million to our pension plans during the nine months ended September 30, 2020 and 2019, respectively. We expect to make total contributions of approximately $7.6 million to our pension plans in 2020 primarily associated with statutorily required plans in the International segment.

Note 15—Derivative Financial Instruments

As part of our currency exchange rate risk management strategy, we may enter into certain derivative foreign currency forward contracts that do not meet the U.S. GAAP criteria for hedge accounting, but which have the impact of partially offsetting certain foreign currency exposures. We account for these forward contracts at fair value and report the related gains or losses in currency exchange losses, net, in the unaudited Condensed Consolidated Statement of Income. The notional amount of open forward contracts was $86.9 million and $74.9 million at September 30, 2020, and December 31, 2019, respectively.

The following table presents the unaudited Condensed Consolidated Balance Sheet location and fair value of assets and liabilities associated with derivative financial instruments:

(In thousands)	**September 30, 2020**	**December 31, 2019**
Derivatives not designated as hedging instruments:		
Foreign exchange contracts: Warranty reserve and other current liabilities	$ 79	$ 125
Foreign exchange contracts: Prepaid expenses and other current assets	68	687

The following table presents the unaudited Condensed Consolidated Statement of Income location and impact of derivative financial instruments:

(In thousands)	Statement of Income Location	(Gain) Loss Recognized in Income Nine Months Ended September 30, 2020	2019
Derivatives not designated as hedging instruments:			
Foreign exchange contracts	Currency exchange losses (gains), net	$ (4,226)	$ 4,647

Note 16—Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are:

- Level 1—Observable inputs that reflect unadjusted quoted prices for identical assets or liabilities in active markets.
- Level 2—Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3—Unobservable inputs for the asset or liability.

The valuation methodologies we used to measure financial assets and liabilities include the derivative financial instruments described in Note 15—Derivative Financial Instruments. We estimate the fair value of the derivative financial instruments, consisting of foreign currency forward contracts, based upon valuation models with inputs that generally can be verified by observable market conditions and do not involve significant management judgment. Accordingly, the fair values of the derivative financial instruments are classified within Level 2 of the fair value hierarchy. With the exception of our investments in marketable securities and fixed rate long-term debt, we believe that the reported carrying amounts of our financial assets and liabilities approximate their fair values.

We value our investments in marketable securities, primarily fixed income, at fair value using quoted market prices for similar securities or pricing models. Accordingly, the fair values of the investments are classified within Level 2 of the fair value hierarchy. The amortized cost basis of our investments was $69.9 million and $49.7 million as of September 30, 2020 and December 31, 2019, respectively. The fair value was $69.9 million and $49.9 million as of September 30, 2020 and December 31, 2019, respectively, which was reported in "Investments, short-term" in the accompanying unaudited Condensed Consolidated Balance Sheet. The change in fair value is recorded in other comprehensive income, net of tax. The Company does not intend to sell, nor is it more likely than not that we will be required to sell, these securities prior to recovery of their cost, as such, management believes that any unrealized gains or losses are temporary; therefore, no impairment gains or losses relating to these securities have been recognized. All investments in marketable securities have maturities of one year or less and are currently in an unrealized loss position as of September 30, 2020.

The reported carrying amount of our fixed rate long-term debt (including the current portion) was $111 million and $113 million at September 30, 2020, and December 31, 2019, respectively. The fair value of this debt was $128 million and $129 million at September 30, 2020, and December 31, 2019, respectively. The fair value of this debt was determined using Level 2 inputs by evaluating similarly rated companies with publicly traded bonds where available or current borrowing rates available for financings with similar terms and maturities.

Note 17—Contingencies

Product liability

We face an inherent business risk of exposure to product liability claims arising from the alleged failure of our products to prevent the types of personal injury or death against which they are designed to protect. Product liability claims are categorized as either single incident or cumulative trauma.

Single incident product liability claims. Single incident product liability claims involve incidents of short duration that are typically known when they occur and involve observable injuries, which provide an objective basis for quantifying damages. The Company estimates its liability for single incident product liability claims based on expected settlement costs for asserted single incident product liability claims and an estimate of costs for single incident product liability claims incurred but not reported ("IBNR"). The estimate for IBNR claims is based on experience, sales volumes, and other relevant information.

The reserve for single incident product liability claims, which includes asserted single incident product liability claims and IBNR single incident product liability claims, was $1.4 million and $3.1 million at September 30, 2020 and December 31, 2019, respectively. Single incident product liability expense was a benefit of $1.7 million during the nine months ended September 30, 2020 and $0.6 million during the nine months ended September 30, 2019. Single incident product liability exposures are evaluated on an annual basis, or more frequently if changing circumstances warrant. Adjustments are made to the reserve as appropriate.

Cumulative trauma product liability claims. Cumulative trauma product liability claims involve exposures to harmful substances (e.g., silica, asbestos and coal dust) that occurred years ago and may have developed over long periods of time into diseases such as silicosis, asbestosis, mesothelioma, or coal worker’s pneumoconiosis. One of the Company's subsidiaries Mine Safety Appliances Company, LLC ("MSA LLC") was named as a defendant in 1,743 lawsuits comprised of 2,840 claims as of September 30, 2020. These lawsuits mainly involve respiratory protection products allegedly manufactured and sold by MSA LLC or its predecessors. The products at issue were manufactured many years ago and are not currently offered by MSA LLC.

A summary of cumulative trauma product liability lawsuits and asserted cumulative trauma product liability claims activity is as follows:

	Nine Months Ended September 30, 2020	Year Ended December 31, 2019
Open lawsuits, beginning of period	1,605	1,481
New lawsuits	273	346
Settled and dismissed lawsuits	(135)	(222)
Open lawsuits, end of period	1,743	1,605

	Nine Months Ended September 30, 2020	Year Ended December 31, 2019
Asserted claims, beginning of period	2,456	2,355
New claims	528	486
Settled and dismissed claims	(144)	(385)
Asserted claims, end of period	2,840	2,456

More than half of the open lawsuits at September 30, 2020, have had a de minimis level of activity over the last 5 years. It is possible that these cases could become active again at any time due to changes in circumstances.

Total cumulative trauma product liability reserve was $166.5 million at September 30, 2020, including $3.3 million for claims settled but not yet paid and related defense costs, and $167.5 million at December 31, 2019, including $3.0 million for claims settled but not yet paid and related defense costs. This reserve includes estimated amounts for asserted claims and IBNR claims. Those estimated amounts reflect asbestos, silica and coal dust claims expected to be resolved through the year 2069 and are not discounted to present value. The Company revised its estimates of MSA LLC's potential liability for cumulative trauma product liability claims for the year ended December 31, 2019 as a result of its annual review process described below. The reserve does not include amounts which will be spent to defend the claims covered by the reserve. Defense costs are recognized in the unaudited Condensed Consolidated Statement of Income as incurred. There was no change in trends or other activity during the quarter that required an interim remeasurement of the cumulative trauma product liability reserve as of September 30, 2020.

At September 30, 2020, $17.7 million of the total reserve for cumulative trauma product liability claims is recorded in the Insurance and product liability line within other current liabilities in the unaudited Condensed Consolidated Balance Sheet and the remainder, $148.8 million, is recorded in the Product liability and other noncurrent liabilities line. At December 31, 2019, $17.4 million of the total reserve for cumulative trauma product liability claims is recorded in the Insurance and product liability line within other current liabilities in the unaudited Condensed Consolidated Balance Sheet and the remainder, $150.1 million, is recorded in the Product liability and other noncurrent liabilities line.

Total cumulative trauma liability losses were $5.7 million for the nine months ended September 30, 2020, and $9.6 million for the nine months ended September 30, 2019, both primarily related to the defense of cumulative trauma product liability claims. Uninsured cumulative trauma product liability losses, which were included in Product liability expense on the unaudited Condensed Consolidated Statement of Income, were $4.9 million and $8.6 million for the nine months ended September 30, 2020 and September 30, 2019, respectively, and represent the total cumulative trauma liability losses net of any estimated insurance receivables as discussed below.

To develop a reasonable estimate of MSA LLC’s potential exposure to cumulative trauma product liability claims, Management performs an annual review of MSA LLC’s cumulative trauma product liability claims in consultation with an outside valuation consultant and outside legal counsel. The review process takes into account developments in MSA LLC’s claims experience over the past year, developments in the tort system generally, and any other relevant information. Quarterly, management and outside legal counsel review whether significant new developments have occurred which could materially impact recorded amounts.

Certain significant assumptions underlying the material components of the reserve for cumulative trauma product liability claims have been made based on MSA LLC's experience related to the following:

- The types and severity, of illnesses alleged by claimants to give rise to their claims;
- The venues in which claims are asserted;
- The number of claims asserted against MSA LLC and the counsel asserting those claims; and
- The percentage of claims resolved through settlement and the values of settlements paid to claimants.

Additional assumptions include the following:

- MSA LLC will continue to evaluate and handle cumulative trauma product liability claims in accordance with its existing defense strategy;
- The number and effect of co-defendant bankruptcies will not materially change in the future;
- No material changes in medical science occur with respect to cumulative trauma product liability claims; and
- No material changes in law occur with respect to cumulative trauma product liability claims including no material state or federal tort reform actions.

Cumulative trauma product liability litigation is inherently unpredictable and MSA LLC's expense with respect to cumulative trauma product liability claims could vary significantly in future periods. With respect to asserted claims, this is because it is unclear at the time of filing whether a claim will be actively litigated. Even when a case is actively litigated, it is often difficult to determine if the lawsuit will be dismissed without payment or settled, because of sufficiency of product identification, statute of limitations challenges, or other defenses. As a result, it is typically unclear until late into a lawsuit whether any particular claim will result in a loss and, if so, to what extent. Actual loss amounts for settled claims are highly variable and turn on a case-by-case analysis of the relevant facts.

With respect to asserted or IBNR cumulative trauma product liability claims, MSA LLC’s expense in future periods may vary from the reserve currently established for several reasons. In particular, MSA LLC’s actual claims experience may differ in one or more respects from the significant assumptions listed above that were used by in establishing the reserve. Other factors that make MSA LLC's asserted and IBNR claims difficult to reasonably estimate include low volumes in the number of claims asserted and resolved (both in general and with respect to particular plaintiffs' counsel, as claims experience can vary significantly among different counsel), inconsistency of claims composition, uncertainty as to if and over what time periods claims might be asserted in the future, and other factors. Numerous uncertainties also exist with respect to factors not specific to MSA LLC, including potential legislative or judicial changes at the federal level or in key states concerning claims adjudication, future bankruptcy proceedings involving key co-defendants, payments from trusts established to compensate claimants, and/or changes in medical science relating to the diagnosis and treatment of claims.

Because cumulative trauma product liability litigation is subject to the significant modeling assumptions and inherent uncertainties described above, and unfavorable rulings or developments could occur, there can be no certainty that MSA LLC may not ultimately incur charges in excess of presently recorded liabilities. The reserve for cumulative trauma product liability claims may be adjusted from time to time based on changes to the factors and assumptions described above. If future estimates of cumulative trauma product liability claims are materially different than the accrued liability, we will record an appropriate adjustment to the unaudited Condensed Consolidated Statement of Income. These adjustments could materially impact our consolidated financial statements in future periods.

Insurance Receivable and Notes Receivable, Insurance Companies

Many years ago, MSA LLC purchased insurance policies from various insurance carriers that, subject to common contract exclusions, provided coverage for cumulative trauma product liability losses (the "Occurrence-Based Policies"). While we continue to pursue reimbursement under certain remaining Occurrence-Based Policies, the vast majority of these policies have been exhausted, settled or converted into either (1) negotiated Coverage-in-Place Agreements, or (2) negotiated settlement agreements, with scheduled payment streams. As a result, MSA LLC is largely self-insured for cumulative trauma product liability claims, and additional amounts recorded as insurance receivables or notes receivables will be limited.

When adjustments are made to amounts recorded in the cumulative trauma product liability reserve, we calculate amounts due to be reimbursed pursuant to the terms of the negotiated Coverage-In-Place Agreements, including cumulative trauma product liability losses and related defense costs, and we record the reimbursable amounts as insurance receivables.

Insurance receivables at September 30, 2020, totaled $59.1 million, of which, $7.6 million is reported in Prepaid expenses and other current assets in the unaudited Condensed Consolidated Balance Sheet and $51.5 million is reported in Insurance receivable and other noncurrent assets. Insurance receivables at December 31, 2019, totaled $63.8 million, of which $7.6 million was reported in Prepaid expenses and other current assets in the unaudited Condensed Consolidated Balance Sheet and $56.2 million was reported in Insurance receivable and other noncurrent assets. The vast majority of the $59.1 million insurance receivable balance at September 30, 2020 is attributable to reimbursement believed to be due under the terms of signed Coverage-In-Place Agreements and a portion of the amount represents the estimated recovery of IBNR amounts.

A summary of insurance receivables balance and activity related to cumulative trauma product liability losses is as follows:

(In millions)	**Nine Months Ended September 30, 2020**	**Year Ended December 31, 2019**
Balance beginning of period	$ 63.8	$ 71.7
Additions	1.1	9.1
Collections and other adjustments	(5.8)	(17.0)
Balance end of period	$ 59.1	$ 63.8

In other cases, we have recorded formal notes receivables due from scheduled payment streams according to negotiated settlement agreements.

Notes receivable from insurance companies at September 30, 2020, totaled $52.0 million, of which $3.8 million is reported in Notes receivable, insurance companies, current on the unaudited Condensed Consolidated Balance Sheet and $48.2 million is reported in Notes receivable, insurance companies, noncurrent. Notes receivable from insurance companies at December 31, 2019, totaled $56.0 million, of which $3.7 million was reported in Notes receivable, insurance companies, current on the unaudited Condensed Consolidated Balance Sheet and $52.3 million was reported in Notes receivable, insurance companies, noncurrent.

A summary of notes receivables from insurance companies balance is as follows:

(In millions)	**Nine Months Ended September 30, 2020**	**Year Ended December 31, 2019**
Balance beginning of period	$ 56.0	$ 59.6
Additions	1.1	1.5
Collections	(5.1)	(5.1)
Balance end of period	$ 52.0	$ 56.0

The collectibility of MSA LLC's insurance receivables and notes receivables is regularly evaluated and we believe that the amounts recorded are probable of collection. The determination that the recorded insurance receivables are probable of collection is based on the terms of the settlement agreements reached with the insurers, our history of collection, and the advice of MSA LLC's outside legal counsel. Various factors could affect the timing and amount of recovery of the insurance and notes receivables, including assumptions regarding various aspects of the composition and characteristics of future claims (which are relevant to calculating reimbursement under the terms of certain Coverage-In-Place Agreements) and the extent to which the issuing insurers may become insolvent in the future.

Product Warranty

The Company provides warranties on certain product sales. Product warranty reserves are established in the same period that revenue from the sale of the related products is recognized, or in the period that a specific issue arises as to the functionality of the Company's product. The determination of such reserves requires the Company to make estimates of product return rates and expected costs to repair or to replace the products under warranty.

The amounts of the reserves are based on established terms and the Company's best estimate of the amounts necessary to settle future and existing claims on products sold as of the balance sheet date. If actual return rates and/or repair and replacement costs differ significantly from estimates, adjustments to recognize additional cost of sales may be required in future periods.

The following table reconciles the changes in the Company's accrued warranty reserve:

(In thousands)	Nine Months Ended September 30, 2020	Year Ended December 31, 2019
Beginning warranty reserve	$ 12,715	$ 14,214
Warranty payments	(7,839)	(12,664)
Provision for warranties	6,777	11,165
Ending warranty reserve	$ 11,653	$ 12,715

Warranty expense was $6.8 million and $8.8 million for the nine months ended September 30, 2020 and 2019, respectively, and is included in "Costs of products sold" on the unaudited Condensed Consolidated Statement of Income.

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis should be read in conjunction with the historical financial statements and other financial information included elsewhere in this quarterly report on Form 10-Q. This discussion may contain forward-looking statements that involve risks and uncertainties. The forward-looking statements are not historical facts, but rather are based on current expectations, estimates, assumptions and projections about our industry, business and future financial results. Our actual results could differ materially from the results contemplated by these forward-looking statements due to a number of factors, including those discussed in the sections of our annual report entitled “Forward-Looking Statements” and “Risk Factors,” and those discussed in our Form 10-Q quarterly reports filed after such annual report (such as in Part II, Item 1A, “Risk Factors.”

BUSINESS OVERVIEW

MSA is a global leader in the development, manufacture and supply of safety products that protect people and facility infrastructures. Recognized for their market leading innovation, many MSA products integrate a combination of electronics, mechanical systems and advanced materials to protect users against hazardous or life-threatening situations. The Company's comprehensive product line, which is governed by rigorous safety standards across highly regulated industries, is used by workers around the world in a broad range of markets, including fire service, oil, gas and petrochemical industry, construction, industrial manufacturing applications, utilities, mining and the military. MSA's core products include breathing apparatus, fixed gas and flame detection systems, portable gas detection instruments, industrial head protection products, firefighter helmets and protective apparel, and fall protection devices. We are committed to providing our customers with service unmatched in the safety industry and, in the process, enhancing our ability to provide a growing line of safety solutions for customers in key global markets.

MSA provides safety equipment to a broad range of customers who must continue to work in times of global pandemic as is now the case with COVID-19. Our customers include first responders, who are tasked with keeping citizens safe, and include industrial and utility workers tasked with maintaining critical infrastructure. For this reason, in order to successfully fulfill our mission as The Safety Company, MSA is an essential business and has continued operating its manufacturing facilities during these times, to the extent practicable, while protecting the health and safety of our workforce, and complying with all applicable laws. The Company has established a special advisory committee to evaluate ongoing concerns, risks and challenges with respect to COVID-19 across its operations and corporate headquarters in January 2020. The Company‘s pandemic response plan includes four key priorities: protecting the health and safety of MSA associates, enabling business continuity, expanding manufacturing capacity of MSA’s existing air-purifying respirator portfolio, and managing its operating expenses and capital structure.

During the second quarter the Company developed a thoughtful, phased approach to begin reconnecting segments of our workforce that had converted to remote working conditions due to COVID-19. This process includes reengaging elements of our salesforce in in-person customer interactions on a limited basis, with additional functions scheduled to begin returning to the office, once deemed appropriate under the circumstances for each geography. A phased approach to reconnect employees while adjusting the characteristics of their physical working environments, providing training and executing enhanced safety and cleaning protocols, will promote workplace safety in a way consistent with the mission of MSA. The process and timing to reconnect our workforce will continue to evolve due to the changing nature of COVID-19, and the Company expects to modify plans as necessary to respond to such changes.

We tailor our product offerings and distribution strategy to satisfy distinct customer preferences that vary across geographic regions. On January 1, 2020, to best serve these customer preferences, we restructured our business from six geographical operating segments into four: Northern North America, Latin America, Europe, Middle East & Africa ("EMEA"), and Asia Pacific ("APAC"). These four operating segments are further aggregated into three reportable geographic segments: Americas, International and Corporate. This change did not impact reportable segments as all changes were within the International segment. In 2019, 65% and 35% of our net sales were made by our Americas and International segments, respectively.

Americas. Our largest manufacturing and research and development facilities are located in the United States (U.S.). We serve our markets across the Americas with manufacturing facilities in the U.S., Mexico and Brazil. Operations in the other countries within the Americas segment focus primarily on sales and distribution in their respective home country markets.

International. Our International segment includes companies in Europe, the Middle East and the Asia Pacific region. In our largest International subsidiaries (in Germany, France, United Kingdom (U.K.), Ireland and China), we develop, manufacture and sell a wide variety of products. In China, the products manufactured are sold primarily in China as well as in regional markets. Operations in other International segment countries focus primarily on sales and distribution in their respective home country markets. Although some of these companies may perform limited production, most of their sales are of products manufactured in our plants in Germany, France, the U.S., U.K., Ireland and China or are purchased from third-party vendors.

Corporate. The Corporate segment primarily consists of general and administrative expenses incurred in our corporate headquarters, costs associated with corporate development initiatives, legal expense, interest expense, foreign exchange gains or losses and other centrally-managed costs. Corporate general and administrative costs comprise the majority of the expense in the Corporate segment.

PRINCIPAL PRODUCTS

The following is a brief description of each of our principal product categories:

MSA's corporate strategy includes a focus on driving sales of core products where we have leading market positions and a distinct competitive advantage. Core products, as mentioned above, include breathing apparatus, fixed gas and flame detection systems, portable gas detection instruments, industrial head protection products, firefighter helmets and protective apparel, and fall protection devices. Core products comprised approximately 85% and 87% of sales for the nine months ended September 30, 2020 and 2019. MSA also maintains a portfolio of non-core products. Non-core products reinforce and extend the core offerings, drawing upon our customer relationships, distribution channels, geographical presence and technical experience. These products are complementary to the core offerings and often reflect more episodic or contract-driven growth patterns. Key non-core products include air-purifying respirators ("APR"), eye and face protection, ballistic helmets and gas masks.

MSA does not produce disposable respirators of any type; however, Mine Safety Appliances Company, LLC ("MSA LLC"), one of the Company's subsidiaries, does produce advanced elastomeric APR, including half-mask respirators, full-facepiece respirators and powered air purifying respirators, each with replaceable filters providing a minimum of N-95 filtration capability. These products have historically been used in many industrial and first responder applications. APR products represented 9% of our consolidated sales for the nine months ended September 30, 2020 with over 75% of this business being in our Americas segment. In the first quarter of 2020, Emergency Use Authorizations ("EUA") were issued by the FDA to expand the types of respiratory protection available to the medical community in response to COVID-19. Those include an EUA that continues to temporarily permit the use of NIOSH-approved respirators in healthcare settings, including elastomeric APR that are part of MSA's existing portfolio. MSA LLC is committed to increasing production of masks within the existing portfolio to support our customer base and other response efforts.

MSA maintains a diversified portfolio of safety products that protect workers and facility infrastructure across a broad array of end markets. While the company sells its products through distribution, which can limit end-user visibility, the company provides estimated ranges of end market exposure to facilitate understanding of its growth drivers. The company estimates that approximately 35%-40% of its overall revenue is derived from the fire service market and 25%-30% of its revenue is derived from the energy market. The remaining 30%-40% is split between construction, utilities, general industrial applications, military and mining.

A detailed listing of our significant product offerings in the aforementioned product groups above is included in MSA's Annual Report on Form 10-K for the year ended December 31, 2019.

RESULTS OF OPERATIONS

Three Months Ended September 30, 2020, Compared to Three Months Ended September 30, 2019

Net Sales. Net sales for the three months ended September 30, 2020, were $304.4 million, a decrease of $46.6 million, or 13.3%, driven by lower sales across most of the core product groups compared to $351.0 million for the three months ended September 30, 2019. Please refer to the Net Sales table for a reconciliation of the quarter over quarter sales change.

Net Sales	**Three Months Ended September,**			
(In millions)	**2020**	**2019**	**Dollar Decrease**	**Percent Decrease**
Consolidated	**$304.4**	**$351.0**	**$(46.6)**	**(13.3)%**
Americas	194.3	234.6	(40.3)	(17.2)%
International	110.1	116.4	(6.3)	(5.4)%

Net Sales	Three Months Ended September 30, 2020 versus September 30, 2019		
(Percent Change)	Americas	International	Consolidated
GAAP reported sales change	**(17.2)%**	**(5.4)%**	**(13.3)%**
Currency translation effects	1.9%	(3.2)%	0.2%
Constant currency sales change	(15.3)%	(8.6)%	(13.1)%

Note: Constant currency sales change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Constant currency sales change is calculated by deducting the percentage impact from currency translation effects from the overall percentage change in net sales.

Net sales for the Americas segment were $194.3 million in the third quarter of 2020, a decrease of $40.3 million, or 17.2%, compared to $234.6 million in the third quarter of 2019. During the quarter, constant currency sales in the Americas segment decreased 15.3% compared to the prior year period, with significant weakness during July and August. This weakness was driven predominately by weaker business conditions in the U.S., our largest and most profitable geographical area, with sales down 25% in July and August as the COVID-19 pandemic continued to have an impact on demand for our products in key markets, most notably oil and gas and commercial construction. Employment based industrial PPE products such as head protection, fall protection and portable gas detection experienced challenges based on continuing high unemployment rates and closed worksites. The decline was partially offset by increased sales of APR. Business conditions started to improve in September. Sales were up 1% in the Americas segment in September on improving conditions in the U.S. after seeing significant declines in July and August.

Net sales for the International segment were $110.1 million in the third quarter of 2020, a decrease of $6.3 million, or 5.4%, compared to $116.4 million for the third quarter of 2019. Constant currency sales in the International segment decreased 8.6% during the quarter on weaker revenues across the segment, with more significant declines in the Middle East.

Following weak demand in key markets in July and August due to the ongoing impact of COVID-19 and global economic challenges, order pace improved in September with orders up 11% as compared the same month a year ago. October orders also remained relatively healthy compared to July and August. While a great deal of uncertainty remains with the upcoming U.S. Presidential election, the global economy and our Company’s key end markets, we expect sequential quarterly invoicing to improve in the fourth quarter.

Our backlog is relatively consistent compared to the end of the second quarter of 2020. Backlog is trending considerably higher than a year ago on increases in SCBA, Turnout Gear, and APR. While backlog continues to be healthy, we remain disciplined in managing our cost structure and executing on long term margin improvement projects. We have been proactive managing through a challenging environment, and we are committed to continuing that approach. We are well positioned to manage through and emerge from this downturn as a stronger organization.

Refer to Note 8—Segment Information to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q, for information regarding sales by product group.

Gross profit. Gross profit for the third quarter of 2020 was $132.2 million, a decrease of $26.5 million or 16.7%, compared to $158.7 million for the third quarter of 2019. The ratio of gross profit to net sales was 43.4% in the third quarter of 2020 compared to 45.2% in the same quarter last year. The lower gross profit ratio during the current quarter is primarily attributable to inefficiencies associated with lower throughput in our factories associated with a lower level of demand and to a lesser extent, additional cost of implementing COVID-19 safety protocols across our worksites, partially offset by strategic pricing improvements.

Selling, general and administrative expenses. Selling, general and administrative ("SG&A") expenses were $64.8 million during the third quarter of 2020, a decrease of $18.1 million or 21.8%, compared to $82.9 million in the third quarter of 2019. Overall, selling, general and administrative expenses were 21.3% of net sales during the third quarter of 2020, compared to 23.6% of net sales during the same period in 2019. The decrease was the result of returns from previously executed restructuring programs and discretionary cost controls implemented earlier in the year, in response to the COVID-19 pandemic and slowdown in certain end markets. These actions provided approximately $8 million to $10 million of cost savings in the quarter. A decrease in variable compensation expense related to bonus and performance-based stock awards provided approximately $6 million of cost savings due to weaker business conditions and the impact on revenue. Additionally, we saw favorable adjustments to medical costs and other accruals that reduced SG&A expenses for the quarter by approximately $3 million as compared to the same period a year ago. While we expect certain costs like variable compensation expense to reset and increase in 2021 as compared to 2020, we are focused on mitigating the amount of costs that might come back into the business as we see an improvement in our end markets and recover from the pandemic.

Please refer to the Selling, general and administrative expenses table for a reconciliation of the period over period expense change.

Selling, general, and administrative expenses (Percent Change)	**Three Months Ended September 30, 2020 versus September 30, 2019 Consolidated**
GAAP reported change	(21.8)%
Currency translation effects	(0.1)%
Constant currency change	(21.9)%

Note: Constant currency change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Constant currency change in selling, general, and administrative expenses is calculated by deducting the percentage impact of currency translation effects from the overall percentage change in selling, general, and administrative expense. Management believes excluding currency translation effects provides investors with a greater level of clarity into spending levels on a year-over-year basis.

Research and development expense. Research and development expense was $13.9 million during the third quarter of 2020, an increase of $0.4 million, compared to $13.5 million during the third quarter of 2019. Research and development expense was 4.6% of net sales in the third quarter of 2020 compared to 3.9% in the same period of 2019. We continue to invest in research and development in order to bring to market the most advanced safety solutions for our customers. During the third quarter of 2020, we capitalized $2 million of software development costs.

Restructuring charges. Restructuring charges during the third quarter of 2020, were $7.6 million primarily due to severance costs related to a plan to reduce our global cost structure. The plan addresses weakened global economic conditions and is designed to improve our business model during the downturn. Together with cost reduction programs executed throughout 2020, we expect these programs to collectively deliver $10 million to $15 million of savings in 2021, and annual savings of $15 million to $20 million thereafter. This compared to restructuring charges of $1.9 million during the third quarter of 2019, primarily related to footprint rationalization and other restructuring programs associated with our ongoing initiatives to drive profitable growth in our International segment. We remain focused on executing programs that will optimize our cost structure.

Currency exchange. Currency exchange losses were $2.8 million in the third quarter of 2020 compared to gains of $0.9 million in the third quarter of 2019. Currency exchange in both periods were related to foreign currency exposure on unsettled inter-company balances.

Refer to Note 15—Derivative Financial Instruments to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q, for information regarding our currency exchange rate risk management strategy.

Product liability expense. Product liability expense for the three months ended September 30, 2020 was $2.1 million compared to $1.7 million in the same period last year. Product liability expense for both periods related primarily to defense costs incurred for cumulative trauma product liability claims.

GAAP operating income. Consolidated operating income for the third quarter of 2020 was $41.1 million compared to $59.6 million in the same period last year. The decrease in operating results was driven by lower sales volumes and lower gross profit for the reasons noted above and increased restructuring charges partially offset by improved SG&A expense leverage.

Adjusted operating income. Americas adjusted operating income for the third quarter of 2020 was $40.9 million, a decrease of $18.1 million, or 31%, compared to $59.0 million in the prior year quarter. The decrease was related to the lower level of sales and lower gross profit for reasons noted above partially offset by improved SG&A leverage. Sales for the quarter declined 13% as compared to the prior year while SG&A expenses declined 22%.

International adjusted operating income for the third quarter of 2020 was $15.7 million, an increase of $1.9 million, or 14%, compared to $13.8 million in the prior year quarter. The increase in adjusted operating income is primarily attributable to improved gross profit associated with strategic pricing improvements and benefits we continue to realize from restructuring programs executed over the past 12 to 18 months which more than offset the decrease in sales volumes.

Corporate segment adjusted operating loss for the third quarter of 2020 was $2.9 million, an improvement of $6.6 million compared to an adjusted operating loss of $9.5 million in the third quarter of 2019 due to lower variable compensation expense, as well as lower professional service and other expenses related to cost control initiatives. We expect corporate adjusted operating loss to moderate back up to a more normalized range of $6 million to $8 million in future quarters.

The following tables represent a reconciliation from GAAP operating income to adjusted operating income (loss) and adjusted EBITDA. Adjusted operating margin % is calculated as adjusted operating income (loss) divided by net sales and adjusted EBITDA margin % is calculated as adjusted EBITDA divided by net sales.

Adjusted operating income **(In thousands)**	**Three Months Ended September 30, 2020** **Americas**	**International**	**Corporate**	**Consolidated**
Net sales	$ 194,303	$ 110,089	$ —	$ 304,392
GAAP operating income				41,149
Restructuring charges (Note 4)				7,603
Currency exchange losses, net (Note 6)				2,759
Product liability expense (Note 17)				2,077
Strategic transaction costs				41
Adjusted operating income (loss)	40,898	15,658	(2,927)	53,629
Adjusted operating margin %	21.0 %	14.2 %		
Depreciation and amortization				9,856
Adjusted EBITDA	47,465	18,848	(2,828)	63,485
Adjusted EBITDA %	24.4 %	17.1 %		

Adjusted operating income **(In thousands)**	**Three Months Ended September 30, 2019** **Americas**	**International**	**Corporate**	**Consolidated**
Net sales	$ 234,624	$ 116,390	$ —	$ 351,014
GAAP operating income				59,614
Restructuring charges (Note 4)				1,850
Currency exchange gains, net (Note 6)				(913)
Product liability expense (Note 17)				1,730
Strategic transaction costs				952
Adjusted operating income (loss)	58,971	13,776	(9,514)	63,233
Adjusted operating margin %	25.1 %	11.8 %		
Depreciation and amortization				9,547
Adjusted EBITDA	65,342	16,854	(9,416)	72,780
Adjusted EBITDA %	27.8 %	14.5 %		

Note: Adjusted operating income (loss) and adjusted EBITDA are a non-GAAP financial measures used by the chief operating decision maker to evaluate segment performance and allocate resources. Adjusted operating income (loss) is reconciled above to the nearest GAAP financial measure, Operating income (loss), and excludes restructuring, currency exchange, product liability expense, and strategic transaction costs. Adjusted EBITDA is reconciled above to the nearest GAAP financial measure, Operating income (loss) and excludes depreciation and amortization expense.

Total other expense, net. Total other expense, net, for the third quarter of 2020 was $1.2 million, compared to $1.3 million for the same period in 2019. Lower interest expense was mostly offset by lower pension income driven by lower discount rates and lower expected rate of return.

Income taxes. The reported effective tax rate for the third quarter of 2020 was 29.3% compared to 26.9% for the third quarter of 2019. This increase from the prior year is attributable to state income taxes, increased statutory rates in foreign jurisdictions, nondeductible executive compensation, and a reduction in the benefit related to domestic goods sold into foreign markets, partially offset by benefits associated with the research and development tax credit.

We are subject to regular review and audit by both foreign and domestic tax authorities. While we believe our tax positions will be sustained, the final outcome of tax audits and related litigation may differ materially from the tax amounts recorded in our consolidated financial statements.

Net income attributable to MSA Safety Incorporated. Net income was $28.0 million for the third quarter of 2020, or $0.71 per diluted share compared to income of $42.2 million, or $1.08 per diluted share, for the same period last year.

Nine Months Ended September 30, 2020 Compared to Nine Months Ended September 30, 2019

Net Sales. Net sales for the nine months ended September 30, 2020, were $960.0 million, a decrease of $66.7 million, or 6.5%, compared to $1,026.7 million for the nine months ended September 30, 2019. Please refer to the Net Sales table for a reconciliation of the period over period sales change.

Net Sales	**Nine Months Ended September 30,**			
(In millions)	**2020**	**2019**	**Dollar Decrease**	**Percent Decrease**
Consolidated	**$960.0**	**$1,026.7**	**$(66.7)**	**(6.5)%**
Americas	629.8	679.7	(49.9)	(7.3)%
International	330.2	347.0	(16.8)	(4.8)%

Net Sales	**Nine Months Ended September 30, 2020 versus September 30, 2019**		
(Percent Change)	**Americas**	**International**	**Consolidated**
GAAP reported sales change	**(7.3)%**	**(4.8)%**	**(6.5)%**
Currency translation effects	1.8%	0.7%	1.5%
Constant currency sales change	(5.5)%	(4.1)%	(5.0)%

Note: Constant currency sales change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Constant currency sales change is calculated by deducting the percentage impact from currency translation effects from the overall percentage change in net sales.

Net sales for the Americas segment were $629.8 million during the nine months ended September 30, 2020, a decrease of $49.9 million, or 7.3%, compared to $679.7 million during the same period last year. During the nine months ended September 30, 2020, constant currency sales in the Americas segment decreased 5.5% compared to the prior year period, driven by weakness in oil and gas and commercial construction markets due to the ongoing impact of the COVID-19 pandemic, which was partially offset by increases in APR.

Net sales for the International segment were $330.2 million during the nine months ended September 30, 2020, a decrease of $16.8 million, or 4.8%, compared to $347.0 million during the same period last year. Constant currency sales in the International segment decreased 4.1% during the period. Weaker fall protection and portable gas detection product sales in the EMEA region were only partially offset by higher industrial head protection sales. APAC sales declined across our core product groups driven by the shutdowns tied to the COVID-19 pandemic.

Refer to Note 8—Segment Information to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q, for information regarding sales by product group.

Gross profit. Gross profit for the nine months ended September 30, 2020, was $431.2 million, a decrease of $38.6 million or 8.2%, compared to $469.8 million during the same period last year. The ratio of gross profit to net sales was 44.9% in the nine months ended September 30, 2020, compared to 45.8% during the same period last year. The lower gross profit ratio during the nine month period is primarily attributable inefficiencies associated with lower throughput in our factories associated with a lower level of demand and to a lesser extent, additional cost of implementing COVID-19 safety protocols across our worksites, partially offset by strategic pricing improvements.

Selling, general and administrative expenses. SG&A expenses were $214.1 million during the nine months ended September 30, 2020, a decrease of $31.3 million or 12.7%, compared to $245.3 million during the same period last year. Overall, selling, general and administrative expenses were 22.3% of net sales during the nine months ended September 30, 2020, compared to 23.9% of net sales during the same period in 2019. The decrease was the result of returns from previously executed restructuring programs and discretionary cost controls implemented earlier in the year, in response to the COVID-19 pandemic and slowdown in certain end markets. These actions provided approximately $15 million to $17 million of cost savings in the nine month period. Additionally, a decrease in variable compensation expense related to bonus and performance-based stock awards provided approximately $11 million of cost savings. While we expect certain costs like variable compensation expense to reset and increase in 2021 as compared to 2020, we are focused on mitigating the amount of costs that might come back into the business as we see an improvement in our end markets and recover from the pandemic.

Please refer to the Selling, general and administrative expenses table for a reconciliation of the period over period expense change.

Selling, general, and administrative expenses (Percent Change)	**Nine Months Ended September 30, 2020 versus September 30, 2019 Consolidated**
GAAP reported change	(12.7)%
Currency translation effects	1.1%
Constant currency change	(11.6)%

Note: Constant currency change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Constant currency change in selling, general, and administrative expenses is calculated by deducting the percentage impact of currency translation effects from the overall percentage change in selling, general, and administrative expense. Management believes excluding currency translation effects provides investors with a greater level of clarity into spending levels on a year-over-year basis.

Research and development expense. Research and development expense was $41.7 million during the nine months ended September 30, 2020 compared to $41.5 million during the same period last year. Research and development expense was 4.3% of net sales in the nine months ended September 30, 2020, compared to 4.0% in the same period of 2019. We launched the Altair io 360 Gas Detector, an area monitor that operates with the simplicity of a smart-home device during the first quarter. During the nine months ended September 30, 2020, we capitalized $6 million of software development costs.

Restructuring charges. Restructuring charges during the nine months ended September 30, 2020, were $18.5 million, primarily due to severance costs related to a plan which addresses weakened global economic conditions and is designed to improve our business model during the downturn. Together with cost reduction programs executed throughout 2020, we expect these programs to collectively deliver $10 million to $15 million of savings in 2021, and annual savings of $15 million to $20 million thereafter. This compared to restructuring charges of $11.2 million during the same period in 2019, primarily related to footprint rationalization and other restructuring programs associated with our ongoing initiatives to drive profitable growth in our International segment. We remain focused on executing programs that will optimize our cost structure.

Currency exchange. Currency exchange losses were $3.8 million in the nine months ended September 30, 2020, compared to $17.3 million in the same period of 2019. The decrease in currency exchange losses from prior year was primarily due to the recognition of non-cash cumulative translation losses of approximately $15.4 million during the first quarter of 2019 as a result of the approval of our plan to close our South Africa subsidiaries. This charge is related to the historical translation of the elements of the financial statements for the business from the functional currency to the U.S. Dollar. The translation impact has been historically recorded as currency translation adjustment ("CTA"), a separate component of accumulated other comprehensive loss within the equity section of the unaudited Condensed Consolidated Balance Sheet.

Refer to Note 15—Derivative Financial Instruments to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q, for information regarding our currency exchange rate risk management strategy.

Product liability expense. Product liability expense for the nine months ended September 30, 2020, was $4.9 million compared to $8.2 million in the same period last year. Product liability expense for both periods related primarily to defense costs incurred for cumulative trauma product liability claims.

GAAP operating income. Consolidated operating income for the nine months ended September 30, 2020, was $148.2 million compared to $146.3 million in the same period last year. The increase in operating results was primarily driven by lower currency exchange losses and improved SG&A leverage. On a consolidated basis, SG&A expenses declined by 13% while sales declined 7%.

Adjusted operating income. Americas adjusted operating income for the nine months ended September 30, 2020, was $149.7 million, a decrease of $21.8 million, or 12.7%, compared to $171.5 million in the prior year. The decrease was related to the lower level of sales partially offset by improved SG&A leverage.

International adjusted operating income for the nine months ended September 30, 2020, was $45.7 million, an increase of $5.8 million, or 14.6%, compared to $39.9 million in the prior year. The increase in adjusted operating income is primarily attributable to improved gross profit associated with strategic pricing improvements and benefits we continue to realize s from restructuring programs executed over the past 12 to 18 months, which more than offset the 5% decrease in sales.

Corporate segment adjusted operating loss for the nine months ended September 30, 2020, was $19.1 million, an improvement of $6.4 million, or 25.1%, compared to an adjusted operating loss of $25.5 million in the same period of 2019 due primarily to lower variable compensation expense as well as lower professional service and other expenses related to cost control initiatives.

The following tables represent a reconciliation from GAAP operating income to adjusted operating income (loss) and adjusted EBITDA. Adjusted operating margin % is calculated as adjusted operating income (loss) divided by net sales and adjusted EBITDA margin % is calculated as adjusted EBITDA divided by net sales.

Adjusted operating income (In thousands)	**Nine Months Ended September 30, 2020**			
	Americas	**International**	**Corporate**	**Consolidated**
Net sales	$ 629,787	$ 330,188	$ —	$ 959,975
GAAP operating income				148,213
Restructuring charges (Note 4)				18,475
Currency exchange losses, net (Note 6)				3,821
Product liability expense (Note 17)				4,878
Strategic transaction costs				202
COVID-19 related costs				757
Adjusted operating income (loss)	149,708	45,719	(19,081)	176,346
Adjusted operating margin %	23.8 %	13.8 %		
Depreciation and amortization				29,284
Adjusted EBITDA	169,343	55,075	(18,788)	205,630
Adjusted EBITDA %	26.9 %	16.7 %		

Adjusted operating income (In thousands)	**Nine Months Ended September 30, 2019**			
	Americas	**International**	**Corporate**	**Consolidated**
Net sales	$ 679,699	$ 347,027	$ —	$ 1,026,726
GAAP operating income				146,252
Restructuring charges (Note 4)				11,203
Currency exchange losses, net (Note 6)				17,338
Product liability expense (Note 17)				8,155
Strategic transaction costs				2,937
Adjusted operating income (loss)	171,463	39,888	(25,466)	185,885
Adjusted operating margin %	25.2 %	11.5 %		
Depreciation and amortization				28,339
Adjusted EBITDA	190,084	49,313	(25,173)	214,224
Adjusted EBITDA %	28.0 %	14.2 %		

Note: Adjusted operating income (loss) and adjusted EBITDA are a non-GAAP financial measures used by the chief operating decision maker to evaluate segment performance and allocate resources. Adjusted operating income (loss) is reconciled above to the nearest GAAP financial measure, Operating income (loss), and excludes restructuring, currency exchange, product liability expense, strategic transaction costs and COVID-19 related costs, consisting of a one-time bonus for essential manufacturing employees. Adjusted EBITDA is reconciled above to the nearest GAAP financial measure, Operating income (loss) and excludes depreciation and amortization expense.

Total other expense, net. Total other expense, net, for the nine months ended September 30, 2020, was $3.5 million, compared to $2.2 million for the same period in 2019, primarily due to lower pension income driven by lower discount rates and lower expected rate of return partially offset by lower interest expense.

Income taxes. The reported effective tax rate for the nine months ended September 30, 2020, was 25.1% compared to 26.3% for the same period in 2019. This decrease from the prior year is attributable to a large non-deductible loss in 2019 related to foreign exchange on entity closures, partially offset by an increase in state income taxes and increased statutory rates in foreign jurisdictions. The adjusted effective tax rate, which excludes the tax benefit associated with ASU 2016-09, *Improvements to Employee Share-Based Payment Accounting*, is expected to be in the range of 25% – 26% for the full year ending December 31, 2020.

We are subject to regular review and audit by both foreign and domestic tax authorities. While we believe our tax positions will be sustained, the final outcome of tax audits and related litigation may differ materially from the tax amounts recorded in our consolidated financial statements.

Net income attributable to MSA Safety Incorporated. Net income was $107.8 million for the nine months ended September 30, 2020, or $2.74 per diluted share compared to income of $105.3 million, or $2.69 per diluted share, for the same period in 2019.

Non-GAAP Financial Information

We may provide information regarding financial measures such as constant currency changes, financial measures excluding the impact of acquisitions and related strategic transaction costs, COVID-19 related costs, consisting of a one-time bonus for essential manufacturing employees and adjusted operating income, adjusted operating margin percentage, adjusted EBITDA and adjusted EBITDA margin percentage, which are not recognized terms under U.S. GAAP and do not purport to be alternatives to net sales, selling, general and administrative expense, operating income or net income as a measure of operating performance. We believe that the use of these non-GAAP financial measures provide investors with additional useful information and provide a more complete understanding of the underlying results. Because not all companies use identical calculations, these presentations may not be comparable to similarly titled measures from other companies. For more information about these non-GAAP measures and a reconciliation to the nearest U.S. GAAP measure, please refer to the reconciliations referenced above in Management's Discussion & Analysis section and in Note 8—Segment Information to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q.

We may also provide financial information on a constant currency basis, which is a non-GAAP financial measure. These references to a constant currency basis do not include operational impacts that could result from fluctuations in foreign currency rates, which are outside of management's control. To provide information on a constant currency basis, the applicable financial results are adjusted by translating current and prior period results in local currency to a fixed foreign exchange rate. This approach is used for countries where the functional currency is the local country currency. This information is provided so that certain financial results can be viewed without the impact of fluctuations in foreign currency rates, thereby facilitating period-to-period comparisons of business performance. Constant currency information is not recognized under U.S. GAAP and it is not intended as an alternative to U.S. GAAP measures.

LIQUIDITY AND CAPITAL RESOURCES

Our primary source of liquidity is operating cash flows, supplemented by borrowings. Our principal liquidity requirements are for working capital, capital expenditures, principal and interest payments on debt, dividend payments and acquisitions. At September 30, 2020, approximately 32% of our long-term debt is at fixed interest rates with repayment schedules through 2031. The remainder of our long-term debt is at variable rates on an unsecured revolving credit facility that is due in 2023. At September 30, 2020, approximately 78% of our borrowings are denominated in U.S. dollars, which limits our exposure to currency exchange rate fluctuations.

At September 30, 2020, the Company had cash, cash equivalents and restricted cash totaling $133.2 million, including $111.7 million held by our foreign subsidiaries, and access to sufficient capital, providing ample liquidity and flexibility to continue to maintain our balanced capital allocation strategy. We believe MSA's healthy balance sheet and access to significant capital at September 30, 2020, positions us well to navigate through the COVID-19 pandemic and challenging business conditions.

Cash, cash equivalents and restricted cash decreased $19.4 million during the nine months ended September 30, 2020, compared to decreasing $31.7 million during the same period in 2019. We continue to employ a balanced capital allocation strategy that prioritizes growth investments, funding our dividend and servicing debt obligations.

Operating activities. Operating activities provided cash of $110.2 million during the nine months ended September 30, 2020, compared to providing $88.3 million during the same period in 2019. The improved operating cash flow during the period was primarily related to lower net product liability payments. Working capital improvement related to accounts receivable were offset by increased inventory levels to support our backlog levels heading into the fourth quarter. Our collections from insurance companies exceeded payments for product liability claims by $4.2 million, in the nine months ended September 30, 2020, compared to product liability payments of $25.1 million, net of collections on insurance receivables, in the same period of 2019. Historically, cumulative trauma liability payments were funded with the Company's operating cash flow, pending resolution of disputed insurance coverage. For more than a decade, we have funded product liability settlements from operating cash flow. The vast majority of the insurance receivable and notes receivable - insurance companies balances at September 30, 2020, is attributable to reimbursement believed to be due under the terms of signed agreements with insurers and are not currently subject to litigation. While the timing of cash flows for product liability and insurance receivable can and do vary from quarter to quarter, we have been successful in establishing cash flow streams that have allowed us to fund these liabilities without a material impact on our capital allocation priorities.

On March 25, 2020, the U.S. Senate passed the Coronavirus Aid, Relief, and Economic Security Act, (the “CARES Act”). The CARES Act includes a number of tax provisions relevant to business. As permitted under the CARES Act, MSA deferred estimated payments of U.S. income taxes of $13.5 million from the first and second quarters of 2020 to July 15, 2020. This income tax payment was reflected as a use of operating cash in the third quarter. As is also permitted under the CARES Act, MSA will defer the remittance of the employer portion of the social security tax. The provision requires that the deferred employment tax be paid over the following two years, with half of the amount required to be paid by December 31, 2021 and the other half by December 31, 2022. We expect to defer approximately $6 million of payments related to the employer’s portion of social security tax in 2020 and have deferred $4 million year to date through September 30, 2020.

Investing activities. Investing activities used cash of $51.7 million during the nine months ended September 30, 2020, compared to using $73.8 million during the same period in 2019. Capital expenditures and the purchase of short-term investments, net of proceeds from maturities drove cash outflows from investing activities during the nine months ended September 30, 2020, while the acquisition of Sierra Monitor Corporation, purchase of short-term investments, net of proceeds from maturities and capital expenditures drove cash outflows from investing activities during the same period in 2019. During 2020, we incurred capital expenditures of $32.7 million, including $6 million associated with software development and other growth programs, compared to capital expenditures of $23.5 million, including $3.5 million associated with software development and other growth programs, in the same period in 2019. MSA LLC, one of the Company's subsidiaries, is continuing to ramp up the capacity for its APR production in the U.S. in response to demand created by the global pandemic. MSA LLC has increased its available workforce for APR production and expects to invest between $11 million to $13 million of capital expenditures to modernize and improve our APR production capacity in the U.S. Approximately $8 million has been spent on this project through September 30, 2020. The Company expects to invest between $45 million to $50 million in total capital expenditures for the full year ending December 31, 2020.

Financing activities. Financing activities used cash of $76.1 million during the nine months ended September 30, 2020, compared to using $40.8 million during the same period in 2019. During the nine months ended September 30, 2020, we had net payments on long-term debt of $5.0 million as compared to net proceeds of $13.0 million during the same period in 2019. We paid cash dividends of $49.8 million during the nine months ended September 30, 2020, compared to $47.2 million in the same period in 2019. We also used cash of $28.7 million during the nine months ended September 30, 2020 to repurchase shares, including $20.1 million related to purchases under our 2015 stock repurchase program, compared to using $11.1 million during the same period in 2019, including $3.3 million related to purchases under our 2015 stock repurchase program.

CUMULATIVE TRANSLATION ADJUSTMENTS

The position of the U.S. dollar relative to international currencies at September 30, 2020, resulted in a translation loss of $3.0 million being recorded to the cumulative translation adjustments shareholders' equity account during the nine months ended September 30, 2020, compared to $15.9 million being recorded to the cumulative translation adjustments account during the same period in 2019.

Brexit has caused, and may continue to create, volatility in global stock markets and regional and global economic uncertainty particularly in the U.K. financial and banking markets. Weakening of economic conditions or economic uncertainties tend to harm our business, and if such conditions worsen in the U.K. or in the rest of Europe, it may have an adverse effect on our consolidated operations and sales. The Company continues to monitor the economic situation related to Brexit and current analysis indicates that exposure in our supply chain related to additional duties and sourcing costs is not material. We have approximately $45 million of annual sales denominated in the British pound which are subject to exchange rate risk associated with any volatility in the British pound. We have long-term debt of $76 million at September 30, 2020, that is denominated in British pounds. Because the debt is denominated in local currency, the value of the debt and local cash flows are aligned with respect to movements in the exchange rate between the British pound and U.S. dollar.

COMMITMENTS AND CONTINGENCIES

We made contributions of $5.7 million to our pension plans during the nine months ended September 30, 2020. We expect to make total contributions of approximately $7.6 million to our pension plans in 2020 primarily associated with statutorily required plans in the International segment.

The Company had outstanding bank guarantees and standby letters of credit with banks as of September 30, 2020, totaling $9.6 million, of which $1.9 million related to the senior revolving credit facility. These letters of credit serve to cover customer requirements in connection with certain sales orders and insurance companies. The Company is also required to provide cash collateral in connection with certain arrangements. At September 30, 2020, the Company has $0.4 million of restricted cash in support of these arrangements.

We have purchase commitments for materials, supplies, services, and property, plant and equipment as part of our ordinary conduct of business.

Please refer to Note 17—Contingencies to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q for further discussion on the Company's single incident and cumulative trauma product liabilities.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP). The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and the related disclosures. We evaluate these estimates and judgments on an on-going basis based on historical experience and various assumptions that we believe to be reasonable under the circumstances. However, different amounts could be reported if we had used different assumptions and in light of different facts and circumstances. Actual amounts could differ from the estimates and judgments reflected in our unaudited condensed consolidated financial statements.

The more critical judgments and estimates used in the preparation of our consolidated financial statements are discussed in Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K for the year ended December 31, 2019.

RECENTLY ADOPTED AND RECENTLY ISSUED ACCOUNTING STANDARDS

Please refer to Note 2— Recently Adopted and Recently Issued Accounting Standards to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Market risk represents the risk of adverse changes in the value of a financial instrument caused by changes in currency exchange rates, interest rates and equity prices. We are exposed to market risks related to currency exchange rates and interest rates.

Currency exchange rate sensitivity. We are subject to the effects of fluctuations in currency exchange rates on various transactions and on the translation of the reported financial position and operating results of our non-U.S. companies from local currencies to U.S. dollars. A hypothetical 10% strengthening or weakening of the U.S. dollar would decrease or increase our reported sales and net income by approximately $13.6 million or 4% and $0.8 million or 3%, respectively, for the three months ended September 30, 2020.

When appropriate, we may attempt to limit our transactional exposure to changes in currency exchange rates through forward contracts or other actions intended to reduce existing exposures by creating offsetting currency exposures. At September 30, 2020, we had open foreign currency forward contracts with a U.S. dollar notional value of $86.9 million. A hypothetical 10% strengthening or weakening of the U.S. dollar would result in a $8.7 million increase or decrease in the fair value of these contracts at September 30, 2020.

Interest rates. We are exposed to changes in interest rates primarily as a result of borrowing and investing activities used to maintain liquidity and fund business operations.

At September 30, 2020, we had $111.0 million of fixed rate debt which matures at various dates through 2031. The incremental increase in the fair value of fixed rate long-term debt resulting from a hypothetical 10% decrease in interest rates would be approximately $8.2 million. However, our sensitivity to interest rate declines and the corresponding increase in the fair value of our debt portfolio would unfavorably affect earnings and cash flows only to the extent that we elected to repurchase or retire all or a portion of our fixed rate debt portfolio at prices above carrying values.

At September 30, 2020, we had $231.9 million of variable rate borrowings under our revolving credit facility. A 100 basis point increase or decrease in interest rates could impact our future earnings under our current capital structure.

Item 4. Controls and Procedures

(a) *Evaluation of disclosure controls and procedures.* Based on their evaluation as of the end of the period covered by this Form 10-Q, the Company's principal executive officer and principal financial officer have concluded that the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) are effective to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and (ii) accumulated and communicated to our management, including the principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

(b) *Changes in internal control*. There were no changes in the Company's internal control over financial reporting that occurred during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1A. Risk Factors

Claims of injuries from our products, product defects or recalls of our products could have a material adverse effect on our business, operating results, financial condition and liquidity.

MSA and its subsidiaries face an inherent business risk of exposure to product liability claims arising from the alleged failure of our products to prevent the types of personal injury or death against which they are designed to protect. In the event the parties using our products are injured or any of our products prove to be defective, we could be subject to claims with respect to such injuries. In addition, we may be required to or may voluntarily recall or redesign certain products that could potentially be harmful to end users. Any claim or product recall that results in significant expense or negative publicity against us could have a material adverse effect on our business, operating results, financial condition and liquidity, including any successful claim brought against us in excess or outside of available insurance coverage.

Our subsidiary, Mine Safety Appliances Company, LLC, may experience losses from cumulative trauma product liability claims. The inability to collect insurance receivables and the transition to becoming largely self-insured for cumulative trauma product liability claims could have a material adverse effect on our business, operating results, financial condition and liquidity.

Our subsidiary, Mine Safety Appliances Company, LLC ("MSA LLC") was named as a defendant in 1,743 cumulative trauma lawsuits comprised of 2,840 claims at September 30, 2020. Cumulative trauma product liability claims involve exposures to harmful substances (e.g., silica, asbestos and coal dust) that occurred years ago and may have developed over long periods of time into diseases such as silicosis, asbestosis, mesothelioma or coal worker's pneumoconiosis. The products at issue were manufactured many years ago and are not currently offered by MSA LLC. A reserve has been established with respect to estimated amounts for cumulative trauma product liability claims currently asserted but not yet resolved and incurred but not reported ("IBNR") cumulative trauma product liability claims. Because our cumulative trauma product liability risk is subject to inherent uncertainties, including unfavorable trial rulings or developments, an increase in newly filed claims, or more aggressive settlement demands, and since MSA LLC is largely self-insured, there can be no certainty that MSA LLC may not ultimately incur losses in excess of presently recorded liabilities. These losses could have a material adverse effect on our business, operating results, financial condition and liquidity.

We will adjust the reserve from time to time based on whether the actual numbers, types and settlement values of claims asserted differ from current projections and estimates or there are significant changes in the facts underlying the assumptions used in establishing the reserve. Each of these factors may increase or decrease significantly within an individual period depending on, among other things, the timing of claims filings or settlements, or litigation outcomes during a particular period that are especially favorable or unfavorable to MSA LLC. We accordingly consider MSA LLC's claims experience over multiple periods and/or whether there are changes in MSA LLC's claims experience and trends that are likely to continue for a significant time into the future in determining whether to make an adjustment to the reserve, rather than evaluating such factors solely in the short term. Any future adjustments to the reserve may be material and could materially impact future periods in which the reserve is adjusted.

In the normal course of business, MSA LLC makes payments to settle these types of cumulative trauma product liability claims and for related defense costs, and records receivables for the amounts believed to be recoverable under insurance. MSA LLC has recorded insurance receivables totaling $59.1 million and notes receivables of $52.0 million at September 30, 2020. Since MSA LLC is now largely self-insured for cumulative trauma claims, additional amounts recorded as insurance receivables will be limited and based on calculating the amounts to be reimbursed pursuant to negotiated Coverage-in-Place Agreements. Various factors could affect the timing and amount of recovery of the insurance receivables, including assumptions regarding claims composition (which are relevant to calculating reimbursement under the terms of certain Coverage-In-Place Agreements) and the extent to which the issuing insurers may become insolvent in the future.

Pandemics or disease outbreaks, such as COVID-19, may cause unfavorable economic or market conditions which could impact demand patterns and/or disrupt global supply chains and manufacturing operations. Collectively, these outcomes could materially and adversely affect our business, results of operations and financial condition.

Pandemics or disease outbreaks such as the novel coronavirus (COVID-19) could result in a widespread health crisis that could adversely affect the economies of developed and emerging markets, potentially resulting in an economic downturn that could affect customers' demand for our products in certain industrial-based end-markets. The spread of pandemics or disease outbreaks may also disrupt the company's manufacturing operations, supply chain, or logistics necessary to import, export and deliver products to our customers. During a pandemic or crisis, applicable laws and response directives could, in some circumstances, adversely affect our ability to operate our plants, or to deliver our products in a timely manner. Some laws and directives may also hinder our ability to move certain products across borders. Economic conditions can also influence order patterns. These factors could negatively impact our consolidated results of operations and cash flow.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

(c) Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased As Part of Publicly Announced Plans or Programs	Maximum Number of Shares That May Yet Be Purchased Under the Plans or Programs
July 2020	—	$ —	—	556,993
August 2020	3,488	125.30	—	553,231
September 2020	—	—	—	535,586

The share repurchase program authorizes up to $100.0 million in repurchases of MSA common stock in the open market and in private transactions. The share purchase program has no expiration date. The maximum shares that may be purchased is calculated based on the dollars remaining under the program and the respective month-end closing share price.

Shares purchased during the quarter relate to stock compensation transactions.

We do not have any other share repurchase programs.

Item 6. Exhibits

(a) Exhibits

31.1 Certification of Chief Executive Officer pursuant to Rule 13a-14(a)

31.2 Certification of Chief Financial Officer pursuant to Rule 13a-14(a)

32 Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. (S)1350

101.INS XBRL Instance Document

101.SCH XBRL Taxonomy Extension Schema Document

101.CAL XBRL Taxonomy Extension Calculation Linkbase Document

101.DEF XBRL Taxonomy Extension Definition Linkbase Document

101.LAB XBRL Taxonomy Extension Label Linkbase Document

101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

MSA SAFETY INCORPORATED

October 29, 2020

/s/ Kenneth D. Krause

Kenneth D. Krause
Sr. Vice President, Chief Financial Officer and Treasurer
Duly Authorized Officer and Principal Financial Officer

/s/ Jonathan D. Buck

Jonathan D. Buck
Chief Accounting Officer

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO RULE 13a-14(a)

I, Nishan J. Vartanian, certify that:

1. I have reviewed this quarterly report on Form 10-Q of MSA Safety Incorporated;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

October 29, 2020

/s/ Nishan J. Vartanian
Nishan J. Vartanian
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO RULE 13a-14(a)

I, Kenneth D. Krause certify that:

1. I have reviewed this quarterly report on Form 10-Q of MSA Safety Incorporated;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

October 29, 2020

/s/ Kenneth D. Krause
Kenneth D. Krause
Sr. Vice President, Chief Financial Officer and Treasurer

EXHIBIT 32

CERTIFICATION

Pursuant to 18 U.S.C. (S) 1350, the undersigned officers of MSA Safety Incorporated (the “Company”), hereby certify, to the best of their knowledge, that the Company’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2020 (the “Report”) fully complies with the requirements of Section 13 (a) or 15 (d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

October 29, 2020

/s/ Nishan J. Vartanian
Nishan J. Vartanian
President and Chief Executive Officer

/s/ Kenneth D. Krause
Kenneth D. Krause
Sr. Vice President, Chief Financial Officer and Treasurer